



APPENDIX A

Alignment of Full-Length DNA Contig Sequence (SEQ ID NO: 1) with Each of Polypeptide Sequences of SEQ ID NOS: 2-34

<110> Farnet, Chris M.
Zazopoulos, Emmanuel
Staffa, Alfredo

<120> GENE CLUSTER FOR RAMOPLANIN BIOSYNTHESIS

<130> 3002-2US

<140> US 09/976,059
<141> 2001-10-15

<150> US 60/239,924
<151> 2000-10-13

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<170> PatentIn version 3.2

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| | | | | Met | Ser | Trp | Arg | Gln | Phe | | | | | | | |
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| cgc | tgg | cag | gcc | ctg | gcc | ggt | gcc | gtc | gcc | ctg | gtg | ccg | ttg | gtg | gcc | 2142 |
| Arg | Trp | Gln | Ala | Leu | Ala | Gly | Ala | Val | Ala | Leu | Val | Pro | Leu | Val | Ala | |
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| tac | ttg | atc | gtc | acg | agc | ctg | gac | atc | cgg | cgc | gcc | cac | gac | cgc | tat | 2190 |
| Tyr | Leu | Ile | Val | Thr | Ser | Leu | Asp | Ile | Arg | Arg | Ala | His | Asp | Arg | Tyr | |
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| cag | gcg | cag | tgc | gcg | tcc | atc | ggc | aac | tgc | gcc | gag | gcg | atg | ctc | cag | 2238 |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| ttc | cag | aac | gac | ttc | cgc | acc | cgc | ctg | ctg | ctg | ctc | gcc | atc | ctg | ctg | 2286 |
| Phe | Gln | Asn | Asp | Phe | Arg | Thr | Arg | Leu | Leu | Leu | Leu | Ala | Ile | Leu | Leu | |
| 55 | | | | | 60 | | | | | 65 | | | | | 70 | |
| gcc | gcg | atc | ccc | ggc | atc | ctc | ggg | gtg | ttc | tgg | ggc | gcg | ccg | ctg | gtg | 2334 |
| Ala | Ala | Ile | Pro | Gly | Ile | Leu | Gly | Val | Phe | Trp | Gly | Ala | Pro | Leu | Val | |
| | | | | 75 | | | | | 80 | | | | | 85 | | |
| gcc | cgc | gag | ctc | gag | acc | ggc | acg | cac | cgc | ctg | gtc | tgg | aac | cag | agc | 2382 |
| Ala | Arg | Glu | Leu | Glu | Thr | Gly | Thr | His | Arg | Leu | Val | Trp | Asn | Gln | Ser | |
| | | | 90 | | | | | 95 | | | | | 100 | | | |
| gtc | acc | cgg | cgc | cgg | tgg | ctg | gcg | gtc | aag | gtg | ctg | ttc | gtc | ggg | gtc | 2430 |
| Val | Thr | Arg | Arg | Arg | Trp | Leu | Ala | Val | Lys | Val | Leu | Phe | Val | Gly | Val | |
| | | 105 | | | | | 110 | | | | | 115 | | | | |
| gcc | gcg | atg | gcc | gtg | gcc | acg | ctc | gtc | agc | acg | ctg | ctg | acc | tgg | gcg | 2478 |
| Ala | Ala | Met | Ala | Val | Ala | Thr | Leu | Val | Ser | Thr | Leu | Leu | Thr | Trp | Ala | |
| | 120 | | | | | 125 | | | | | 130 | | | | | |
| agc | agc | ccg | gtc | gac | gcg | gtg | tcg | cag | gac | cgg | ttc | ggc | gcg | ctg | gtg | 2526 |
| Ser | Ser | Pro | Val | Asp | Ala | Val | Ser | Gln | Asp | Arg | Phe | Gly | Ala | Leu | Val | |
| 135 | | | | | 140 | | | | | 145 | | | | | 150 | |
| ttc | gac | gcc | cgc | aac | atc | gtg | ccg | gtc | gcg | tac | gcc | gcc | ttc | gcc | ctc | 2574 |
| Phe | Asp | Ala | Arg | Asn | Ile | Val | Pro | Val | Ala | Tyr | Ala | Ala | Phe | Ala | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | | |
| gtc | ctc | ggc | acg | gtg | atc | ggc | ctg | ctc | gtg | cgc | cgc | acc | atc | ccg | gcc | 2622 |
| Val | Leu | Gly | Thr | Val | Ile | Gly | Leu | Val | Arg | Arg | Thr | Ile | Pro | Ala | | |
| | | | 170 | | | | 175 | | | | | 180 | | | | |
| atg | gcg | ctc | acc | atg | ctc | gtc | ttc | gcc | gtc | gtg | cag | ttc | acc | gtg | ccg | 2670 |
| Met | Ala | Leu | Thr | Met | Leu | Val | Phe | Ala | Val | Val | Gln | Phe | Thr | Val | Pro | |
| | | 185 | | | | | 190 | | | | | 195 | | | | |
| gcg | ctg | gcc | cgg | ccg | cac | ctg | atg | gcg | ccg | gag | acc | cag | acc | cgg | cag | 2718 |
| Ala | Leu | Ala | Arg | Pro | His | Leu | Met | Ala | Pro | Glu | Thr | Gln | Thr | Arg | Gln | |
| | 200 | | | | | 205 | | | | | 210 | | | | | |
| atg | acg | ttg | cag | gag | ttc | ggc | gag | gtg | cgc | ggc | ttc | ggc | gac | gag | ccc | 2766 |
| Met | Thr | Leu | Gln | Glu | Phe | Gly | Glu | Val | Arg | Gly | Phe | Gly | Asp | Glu | Pro | |
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| acg | gtc | aac | ggg | ctg | agc | atc | cgg | ggc | gcg | tgg | gtg | acc | agc | acc | agc | 2814 |
| Thr | Val | Asn | Gly | Leu | Ser | Ile | Arg | Gly | Ala | Trp | Val | Thr | Ser | Thr | Ser | |
| | | | 235 | | | | | | 240 | | | | | 245 | | |
| ccg | ctg | ctc | acc | gcc | gac | ggg | acc | cgg | ctc | gac | aag | gcc | acg | tac | cgc | 2862 |
| Pro | Leu | Leu | Thr | Ala | Asp | Gly | Thr | Arg | Leu | Asp | Lys | Ala | Thr | Tyr | Arg | |
| | | | 250 | | | | | 255 | | | | | 260 | | | |
| aaa | tgc | gtg | acc | gac | ccc | ccg | gcc | gtc | tcg | ggc | gga | gct | ccc | ggc | gtc | 2910 |
| Lys | Cys | Val | Thr | Asp | Pro | Pro | Ala | Val | Ser | Gly | Gly | Ala | Pro | Gly | Val | |
| | | 265 | | | | | 270 | | | | | 275 | | | | |
| ggc | ggc | acc | gtc | gcc | tgc | ctg | gcc | gac | ctc | gat | ctg | cac | gtc | gag | gtg | 2958 |
| Gly | Gly | Thr | Val | Ala | Cys | Leu | Ala | Asp | Leu | Asp | Leu | His | Val | Glu | Val | |
| | 280 | | | | | 285 | | | | | 290 | | | | | |
| gcc | tac | cag | ccc | aac | gac | cgg | tac | tgg | acc | ttc | cag | tgg | atc | gag | tcg | 3006 |
| Ala | Tyr | Gln | Pro | Asn | Asp | Arg | Tyr | Trp | Thr | Phe | Gln | Trp | Ile | Glu | Ser | |
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|---|------|
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| cgc atc cgc cgc cac gtc atc tga tcgtcccccc gtccgcacgg attcgaagga Arg Ile Arg Arg His Val Ile 330 | 3108 |
| tagaaagac | |
| atg cca cac gag gat tcc tcg ccc gtt ctg cag gcg gag ggc ttg acc Met Pro His Glu Asp Ser Ser Pro Val Leu Gln Ala Glu Gly Leu Thr 1 5 10 15 | 3165 |
| aaa cgc tac ggt cgg cgc acc gcc ctg cag gac tgc aac ctg acc att Lys Arg Tyr Gly Arg Arg Thr Ala Leu Gln Asp Cys Asn Leu Thr Ile 20 25 30 | 3213 |
| ccg cgc ggc cgg gtg atc ggc ctg gtc ggc ccg aac ggc gcc ggc aag Pro Arg Gly Arg Val Ile Gly Leu Val Gly Pro Asn Gly Ala Gly Lys 35 40 45 | 3261 |
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| tcg ctg cgc gtg ctc ggc gag acg ccg gcc gcg aac gcc ggc cac ctc Ser Leu Arg Val Leu Gly Glu Thr Pro Ala Ala Asn Ala Gly His Leu 65 70 75 80 | 3357 |
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| ctg ctc gag ttc gtc acc gag ctc gac gcc agc gcg atc ctg tcg tcg Leu Leu Glu Phe Val Thr Glu Leu Asp Ala Ser Ala Ile Leu Ser Ser 180 185 190 | 3693 |
| cac ctg ctc ggc gac gtc gag cgc gtc tgc aac tac ctg atc gtg ctc His Leu Leu Gly Asp Val Glu Arg Val Cys Asn Tyr Leu Ile Val Leu 195 200 205 | 3741 |
| tgc gcc tcc cgg gtg cag gtc gcc ggc gac gtt ccc gac ctg ctc aac | 3789 |

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|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Cys | Ala | Ser | Arg | Val | Gln | Val | Ala | Gly | Asp | Val | Pro | Asp | Leu | Leu | Asn | |
| 210 | | | | | | 215 | | | | | 220 | | | | | |
| acg | cac | tac | cgc | atc | gtc | gcg | ccc | cgc | ggc | gag | ctg | gac | cat | ccg | ccg | 3837 |
| Thr | His | Tyr | Arg | Ile | Val | Ala | Pro | Arg | Gly | Glu | Leu | Asp | His | Pro | Pro | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| gcc | ggc | ctc | gag | gtc | atc | cgg | gcg | cag | cac | gcc | gac | cgg | tac | acc | acc | 3885 |
| Ala | Gly | Leu | Glu | Val | Ile | Arg | Ala | Gln | His | Ala | Asp | Arg | Tyr | Thr | Thr | |
| | | | | 245 | | | | | 250 | | | | | 255 | | |
| gcc | gtc | gtg | cgc | ggc | gac | ggc | agc | cgg | ccg | agc | acc | tgg | acg | atc | gag | 3933 |
| Ala | Val | Val | Arg | Gly | Asp | Gly | Ser | Arg | Pro | Ser | Thr | Trp | Thr | Ile | Glu | |
| | | | 260 | | | | | 265 | | | | | 270 | | | |
| ccc | atc | cag | ctc | gag | gag | ctc | gtg | ctg | gcg | tac | atg | acg | cgg | gcg | atg | 3981 |
| Pro | Ile | Gln | Leu | Glu | Glu | Leu | Val | Leu | Ala | Tyr | Met | Thr | Arg | Ala | Met | |
| | | 275 | | | | | 280 | | | | | 285 | | | | |
| ggc | gtc | acc | ggc | gag | ccg | ctg | atg | gcc | gcg | tcc | ggg | gag | gtc | gtc | cgt | 4029 |
| Gly | Val | Thr | Gly | Glu | Pro | Leu | Met | Ala | Ala | Ser | Gly | Glu | Val | Val | Arg | |
| | 290 | | | | | 295 | | | | | 300 | | | | | |
| tga | tctgg | | | | | | | | | | | | | | | |
| atg | agc | tgg | cgg | cag | ttc | cgc | ggc | cag | gcc | gtc | | | | | | 4070 |
| Met | Ser | Trp | Arg | Gln | Phe | Arg | Gly | Gln | Ala | Val | | | | | | |
| 1 | | | | 5 | | | | | 10 | | | | | | | |
| gtc | ggg | gtc | gtc | gtg | ctg | gcc | ctg | ctc | gcc | gca | tac | ctg | gtc | tac | ctc | 4118 |
| Val | Gly | Val | Val | Val | Leu | Ala | Leu | Leu | Ala | Ala | Tyr | Leu | Val | Tyr | Leu | |
| | | | 15 | | | | | 20 | | | | | 25 | | | |
| ggc | gtc | gac | atc | cgc | ggc | gcc | tac | gac | gac | tat | cgg | gcg | cag | tgc | ccc | 4166 |
| Gly | Val | Asp | Ile | Arg | Gly | Ala | Tyr | Asp | Asp | Tyr | Arg | Ala | Gln | Cys | Pro | |
| | | 30 | | | | | 35 | | | | | 40 | | | | |
| gcg | ggc | ggc | gac | tgc | gcc | ggg | ccc | ctg | ggc | cag | ttc | agc | ctc | gac | tac | 4214 |
| Ala | Gly | Gly | Asp | Cys | Ala | Gly | Pro | Leu | Gly | Gln | Phe | Ser | Leu | Asp | Tyr | |
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| gag | aac | acg | ttg | ctc | tat | ctg | gcc | ggc | gtg | ctg | gcg | ctg | gtg | ccc | ggc | 4262 |
| Glu | Asn | Thr | Leu | Leu | Tyr | Leu | Ala | Gly | Val | Leu | Ala | Leu | Val | Pro | Gly | |
| 60 | | | | | 65 | | | | 70 | | | | | | 75 | |
| ctg | ctc | ggc | atg | ttc | tgg | ggc | gcg | ccc | ctg | atc | acc | cgg | gag | ctg | gag | 4310 |
| Leu | Leu | Gly | Met | Phe | Trp | Gly | Ala | Pro | Leu | Ile | Thr | Arg | Glu | Leu | Glu | |
| | | | | 80 | | | | | 85 | | | | | 90 | | |
| aac | ggc | acc | cag | cgc | ctg | gtg | tgg | aac | cag | agc | gtg | acc | cgc | cgc | cga | 4358 |
| Asn | Gly | Thr | Gln | Arg | Leu | Val | Trp | Asn | Gln | Ser | Val | Thr | Arg | Arg | Arg | |
| | | | 95 | | | | | 100 | | | | | 105 | | | |
| tgg | ctg | ctg | atc | aag | cta | ctc | gtc | gtg | ggc | ttg | gcc | tgc | atg | gtg | gtg | 4406 |
| Trp | Leu | Leu | Ile | Lys | Leu | Leu | Val | Val | Gly | Leu | Ala | Cys | Met | Val | Val | |
| | | 110 | | | | | 115 | | | | | 120 | | | | |
| gcc | ggg | gtg | ccg | agc | ctg | ctg | ctg | acc | tgg | gcc | gcc | gcg | ccg | gtc | gac | 4454 |
| Ala | Gly | Val | Pro | Ser | Leu | Leu | Leu | Thr | Trp | Ala | Ala | Ala | Pro | Val | Asp | |
| | 125 | | | | | 130 | | | | 135 | | | | | | |
| aat | gtg | gcc | gac | aac | cgg | ttc | agc | acg | gtg | atg | ttc | gga | gcc | cgg | ttc | 4502 |
| Asn | Val | Ala | Asp | Asn | Arg | Phe | Ser | Thr | Val | Met | Phe | Gly | Ala | Arg | Phe | |

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|--|-----|-----|-----|------|
| 140 | 145 | 150 | 155 | |
| ctg ccg ccg atc gcc tac gcc gcc ttc gcg ttc gtg ctc ggc acg ctc Leu Pro Pro Ile Ala Tyr Ala Ala Phe Ala Phe Val Leu Gly Thr Leu | 160 | 165 | 170 | 4550 |
| atc ggc ctg ctg gtc cgc cgg acg gtg ccg gcg atg gcg ctc acg ctc Ile Gly Leu Leu Val Arg Arg Thr Val Pro Ala Met Ala Leu Thr Leu | 175 | 180 | 185 | 4598 |
| gtg gcg ttc gtg atc ttc cag ttc ctg gtg ccg aac ctg gtg cgc ccc Val Ala Phe Val Ile Phe Gln Phe Leu Val Pro Asn Leu Val Arg Pro | 190 | 195 | 200 | 4646 |
| cac ctc atg ccg gcc aag cac ctg gtc aag ccg atg acg gtg agc gcc His Leu Met Pro Ala Lys His Leu Val Lys Pro Met Thr Val Ser Ala | 205 | 210 | 215 | 4694 |
| atc aac gag gcc aag tcg ctg ggc agc atc acc ggc gcg ccg gtg ctg Ile Asn Glu Ala Lys Ser Leu Gly Ser Ile Thr Gly Ala Pro Val Leu | 220 | 225 | 230 | 4742 |
| aac ggc ctg tcg atc tcg cag ggc tgg atc acc gac gtc agc gcg ctc Asn Gly Leu Ser Ile Ser Gln Gly Trp Ile Thr Asp Val Ser Ala Leu | 240 | 245 | 250 | 4790 |
| aag acc gcc gac ggc cgg tcg ctg gac gcg aag acg ttc gac aac tgc Lys Thr Ala Asp Gly Arg Ser Leu Asp Ala Lys Thr Phe Asp Asn Cys | 255 | 260 | 265 | 4838 |
| tac atg aac gcg ccc aag acc ggt gcg acc gag ggc ccg tac ggt gac Tyr Met Asn Ala Pro Lys Thr Gly Ala Thr Glu Gly Pro Tyr Gly Asp | 270 | 275 | 280 | 4886 |
| gtc gcg gtc tgc ctg gcc aag ctg gac ctg cac gtc gac atc gcc tac Val Ala Val Cys Leu Ala Lys Leu Asp Leu His Val Asp Ile Ala Tyr | 285 | 290 | 295 | 4934 |
| cag ccg tgg aac cgg tac tgg gcc ttc cag ttc ctc gaa tcg ggg ttc Gln Pro Trp Asn Arg Tyr Trp Ala Phe Gln Phe Leu Glu Ser Gly Phe | 300 | 305 | 310 | 4982 |
| tat gtg ctg ctc agc ggc ctg ctg atc ggc gcc gcg gtg tgg cgc gtc Tyr Val Leu Leu Ser Gly Leu Leu Ile Gly Ala Ala Val Trp Arg Val | 320 | 325 | 330 | 5030 |
| cag cgg cgg ccc agc Gln Arg Arg Pro Ser | 335 | | | |
| tga gatgagcgcg cacagcaccg tgaccgagcc gggcgccactc | | | | 5088 |
| gtccgtggca cccgggaagc cggggggcggc ggcgagcgtc gtgccgcggt ggccgcctg | | | | 5148 |
| gtcatcgggc gggcgggcggt gcggtaccgc acggtgctgg tggcgctggg aagcccgccg | | | | 5208 |
| accgacagcg acgaagcagt tctcgggctg gtctccctgc acatcgcgca gggacgcgac | | | | 5268 |
| gcaccgggtcc atctgtacgg ccaggactac atgggcatgc tcgaggccca cctggccgca | | | | 5328 |
| ccgctgggtcc gggcggttcgg cgccgggggtg gtgccgggtcc gtgcgcgct gctcgctctg | | | | 5388 |
| ttcgcgctgt tctgggtcgt catgtaccag ctcacccgga gactgtggtc gccggggcgtc | | | | 5448 |

APPENDIX A

| | | | | | | |
|------------|-------------|-------------|-------------|------------|-------------|------|
| gcggtggcga | cgggtgctggt | gctcgggtctc | ggcgccgacc | gcgtgctgag | cgccgagttg | 5508 |
| acggccggcg | gcgggtaccc | ggagatcgcc | gttctcggcg | cgctcctgtt | cctcctcgcg | 5568 |
| gtgcggatcg | gccgcgggga | ggtccgcgc | cgggtgctcg | ccctggccga | attcgggctt | 5628 |
| gcgctgggcc | tcggcggtgc | gatggtggcc | aacctctgcc | cgggcgaccg | ctgcggcact | 5688 |
| acgagtttct | ggtggccgc | gatctgtctc | gcgctgctcg | cggtgacggc | cgggcccggcg | 5748 |
| gtgcgtgcgc | tcgggcgcgc | cgttcgggag | cgggcggcga | tcgggtcgcg | cccgcgcacg | 5808 |
| cgcggtcagg | ggctggcggc | gatgcggtcg | cgcccgtcga | cgccgcgctg | gagcatgccc | 5868 |
| gtgagcgcg | cgagcgctc | cgcgcggccc | ggatgggctt | ccagctcgcg | cagcgccgag | 5928 |
| atggtcgccg | ccagctcggc | ggacaggctg | tcgagcacgt | cggcgaccgc | gccggcggtt | 5988 |
| gcggccagga | tctccgtcca | cagtgcgcgc | cgaccgccc | cgatccgcgt | ggtgtcccgc | 6048 |
| acgccctggc | cggccaggcc | cagctgggccc | ggggtgccgt | ccagcatccg | cgcggccagc | 6108 |
| aggccggcca | ccaggtgcgg | cacgtgcgag | acgagggcca | ccgccgggtc | gtgctcctcg | 6168 |
| gcgctcatca | gcaccggcgt | ggcgccgcag | gccgaaacca | cgcccgaggc | cccgtcgacg | 6228 |
| gcggcggtgc | tgttcgcgc | gccgggggag | agcaccaggg | gccgcccctc | gaacagcgag | 6288 |
| ccccgggccc | cgtgcgggtc | ggagcggttc | ctgccggcga | ggggatgccc | gccgacgtgg | 6348 |
| gaggaggcgt | cgcagccgag | cacctcgatc | tgccgggagg | gcagcacttt | cacgctcgcc | 6408 |
| gcacggtgt | gcacccgggc | cgttccccgc | cgctggagggt | cggccagcac | gggagcgacg | 6468 |
| gccgcggcg | gcaccgcgat | cacggcgacg | tccaccggg | tgccgggctc | gcccgcgatg | 6528 |
| cccgcgccga | gcgcgcgcgc | ggcgcgcgcg | gcggcgggat | cgcggtccag | caggtgaacg | 6588 |
| gtgatgtcac | gttgggtgag | agcgaggccg | accgaggctc | cgatcagccc | ggtgccgacg | 6648 |
| acgaccgcgc | tgcgcacaa | ggctcccatc | gccgcattcg | ctgttcaggc | cgcgttcttc | 6708 |
| tcgagtgttt | cggcgaattc | caaccactct | tgtgaacaac | gccgggccc | gttcgccagg | 6768 |
| acgtacgtgc | aatgcgacgg | aaccgcgtcg | agcatgtctt | tccactcact | atcttgaacc | 6828 |
| gtgcgggcaa | gaaccctatc | caaaagattg | cggccggatt | cggtaaatac | cagcgacggg | 6888 |
| tcgttcttca | agccttgaag | tattgaccgc | acggtcggct | cgagcagccg | aatcgtgttt | 6948 |
| tccttgctga | aggaaatgtc | gtcgcggtga | cgcgccgtgc | ggcgggggcc | gggcagcggg | 7008 |
| tcctcgccgc | gctgcaggcg | attgcgcacg | tcacgcgcgg | tcgagggcga | tacgcggcg | 7068 |
| ttcttggcga | tctccgcag | ggaggcgctg | ggctgttgct | gaatgtagct | gacggccttc | 7128 |
| agtcggccct | cgggaattgtc | cagcgggcgc | acccggccgt | cccggccgac | gcgggtgcgc | 7188 |
| gagccctgcc | cgatgtcgcc | ggagagctcg | aggcgccggc | gtatgttgcc | cacgggtgcg | 7248 |
| gcgctgagtc | cgctggaggc | cgtattgtg | cggctctgac | aggacggatg | cgactcgatg | 7308 |
| atccgttccg | cggcgcgcg | gcgggtccgt | gtggacagtg | gcaggccgtg | cgcgatgttc | 7368 |

APPENDIX A

| | | | | | | |
|-------------|------------|-------------|------------|-------------|-------------|------|
| gccttgacgc | cgaggacgaa | tgccctcctgc | tcgctgccct | cgaacatcgc | ggccttgatc | 7428 |
| agctcgtcgc | cgcgcagccg | ggccgcgccc | agccggtgcg | cgcgcgcgat | gacccgcctg | 7488 |
| cttgccgcggt | gcacgatgat | cggcggcagt | tcggcgtcga | ggctggccag | catctgggtg | 7548 |
| tgccgcggat | cctcgcgggc | cagccgggggt | gaatcgagca | tttccagtga | atccacaggt | 7608 |
| agccactcga | cgcgcacatc | tgacggagtg | ttcatctgtg | tttcgctcgtg | cgcgacccgc | 7668 |
| tcgtggcgcg | ctgacgcgat | gtgcaatgac | tcataccaa | ccccgaatg | gctggactcc | 7728 |
| gatgaccgct | ggacacgatg | caccgcaggt | ctcaacgaga | tgctttgacg | accgtcggcc | 7788 |
| ggctcggccg | tcgtggccga | gtgcgcttgt | gcagcgggct | ttcaatgtcc | gacactaatc | 7848 |
| gagggcgccg | tggctcgcca | agctcgtaag | aggttctctg | acgcattttt | aagctgtctt | 7908 |
| cacggtgaag | tttatcgatc | ccacgggtggg | tcggtgggcg | tcgagcggga | tctgatcgcc | 7968 |
| acgatgcgtc | atcgtgtccg | tgccgttcgt | actggtcaac | cgaggagatct | cgggggtgcc | 8028 |
| acggtggacg | tgccggcccg | gtccgggccc | ccccggccga | gggcgcgggg | gacgggttcg | 8088 |
| gcctattttc | tgcaagttgc | agactgtgcg | attcgggtgg | gtcacggccg | gagtgcgcgc | 8148 |
| atctcggctc | tgatgaagcc | cgcacgcgc | ttgacaccct | cgtcgatctc | ctccggggtg | 8208 |
| aggtagctga | tcgacaggcg | gatgccttgt | tcgcgcgcgc | cggccgggta | gaagtacgac | 8268 |
| atcggcgctc | agatcacccc | gtggtcctcg | gcgcttcggg | acagggcggc | gttgctcggcg | 8328 |
| gtgaagggca | cgttcacggc | gaggaagaag | cgcgcgctcg | ggcgggtcca | gcgcacgccc | 8388 |
| gtgcgtgcgc | ggaaggacgc | cgggaaggtg | tcctcgagcc | ggtcgagggg | gcgcgcgcatc | 8448 |
| gccgcgcggt | agtgcgcgca | gctctccgca | ctgcctcggg | cgcgggtgcc | gccggccgcg | 8508 |
| agcagcatcc | cggccacggc | ggcctggctc | agcggcgagg | tgttcacctg | gacctgtctc | 8568 |
| ttcaccttcg | ccagctcgtc | ggcgagcagg | cggcgccgc | cgcggcgctc | cgcacccggc | 8628 |
| tggtcggcga | tcgcgaagcc | cacgcgcgcg | cccggaaaga | gcgtcttgga | gaacgatccg | 8688 |
| aggtggacga | cgtgcggccc | cgggtcgagg | gccttgaggg | aggggaagctg | ctgccccggg | 8748 |
| ctgacgagcc | ggtacgggct | gtcctcgatc | accagcaggc | cgcgctcgcc | ggcgaggctg | 8808 |
| agcagggcgt | ggcgggcctc | cagcggcatc | gtggcgcccc | acgggttggt | gtggtcgggc | 8868 |
| acgacataga | agggcggggg | acgcgggccc | cggctcagct | cgcggtggac | cgcgcggggc | 8928 |
| aggtcctcgg | gatggaagcc | gtcctcgcgc | tcggcgacgg | gcaccgggtc | gatgtcgagc | 8988 |
| agccgcgcgg | cgcgggtgat | gccgacgtag | cacgggctcg | ccacgaacag | cgcgtcgcgc | 9048 |
| tcgtcccgga | tcagcgcgcg | cagcgcacgc | agcatcgctt | cctgcgcgcc | gaccgtcacg | 9108 |
| acgatggact | ccggagccac | gtcgatgccc | tcgtcgcgcc | gcagccactg | cgcgataccc | 9168 |
| tcgcggatgc | ggccggccgc | cgggcggtac | tggaagacgg | cgtccctgat | ctccgcgggc | 9228 |
| gagcggccct | ggccggcgag | gtgctcgaga | tagccgcgga | tgccgcggaa | gatctgctcg | 9288 |

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acgtcgaaga acccgtcgaa cgggcggccg ggcgcgaacg agacggctcg cggatagcgg 9348
 gcggtcacct cgttgaggaa gttcatggtg tccagcagcg ggtcggacag gctctggtgc 9408
 aggtcctcgc gccgcaggac gcggccggtg cccggagcct cgcgcaggat gctcatcatg 9468
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 gcctcgcggg cgctccagg ccgccagcga aaggacgccg cc

gtg acc gcc acc gcc ctc ctg ccc 9714
 Val Thr Ala Thr Ala Leu Leu Pro
 1 5

ctg acc ctc gcg gac tac gaa cag ctg gcc caa gcg cga atg gag ccc 9762
 Leu Thr Leu Ala Asp Tyr Glu Gln Leu Ala Gln Ala Arg Met Glu Pro
 10 15 20

ccg gtg tgg gac ttc atc gcc ggc ggc gcg ggg gag gag ctg acg ctg 9810
 Pro Val Trp Asp Phe Ile Ala Gly Gly Ala Gly Glu Glu Leu Thr Leu
 25 30 35 40

gcc gcg aac acc gcc gcc ttc gca ccg ccg cgg ctg cgg cca cgg gtg 9858
 Ala Ala Asn Thr Ala Ala Phe Ala Pro Pro Arg Leu Arg Pro Arg Val
 45 50 55

ctg acc ggc gcg ggc gcg ccg gac acg ggc acg acg atc ctc gga cgg 9906
 Leu Thr Gly Ala Gly Ala Pro Asp Thr Gly Thr Thr Ile Leu Gly Arg
 60 65 70

cgg tgg gcg gcg ccg atc ggc gtc gcc ccg ctc ggc tat cac acg ctc 9954
 Arg Trp Ala Ala Pro Ile Gly Val Ala Pro Leu Gly Tyr His Thr Leu
 75 80 85

gtc gac ccg gcg ggc gag gtc gcc acc gcc gcg gcg gcc ggc gcg gcc 10002
 Val Asp Pro Ala Gly Glu Val Ala Thr Ala Ala Ala Ala Gly Ala Ala
 90 95 100

ggg ctg ccg ctc gtg gtg agc acg ttc tcc ggg cgg acc gtg gag gac 10050
 Gly Leu Pro Leu Val Val Ser Thr Phe Ser Gly Arg Thr Val Glu Asp
 105 110 115 120

atc gcc gcg gcc acc acc gcg ccg cgc tgg ttg cag gtc tat tgc ttc 10098
 Ile Ala Ala Ala Thr Thr Ala Pro Arg Trp Leu Gln Val Tyr Cys Phe
 125 130 135

cgc gac ccg gcg gtc acc gcc gcg ctc gtc acg agg gcc gtc cgc gcc 10146
 Arg Asp Arg Ala Val Thr Ala Ala Leu Val Thr Arg Ala Val Arg Ala
 140 145 150

ggc ttc gag gcg ctg gtg ctc acc gtc gac gcg ccg cgg ctg ggc cgc 10194
 Gly Phe Glu Ala Leu Val Leu Thr Val Asp Ala Pro Arg Leu Gly Arg
 155 160 165

cgc ctg cgg gac atc cgc aac gac ttc cgc ctg ccg ccc ggc gtg gcg 10242
 Arg Leu Arg Asp Ile Arg Asn Asp Phe Arg Leu Pro Pro Gly Val Ala
 170 175 180

ccg gca aac ctc acc ggc gac ggc ttc gcg tcg ccc agc ggg cac gcg 10290

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| | | | | | | | | | | | | | | | | |
|-------------|-------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------|
| Pro 185 | Ala | Asn | Leu | Thr | Gly 190 | Asp | Gly | Phe | Ala | Ser 195 | Pro | Ser | Gly | His | Ala 200 | |
| ctc | ggc | gcg | ttc | gac | gcc | gcg | atg | gac | tgg | acc | gtc | gtt | gcc | tgg | ctg | 10338 |
| Leu | Gly | Ala | Phe | Asp 205 | Ala | Ala | Met | Asp 210 | Trp | Thr | Val | Val | Ala | Trp 215 | Leu | |
| cgg | gag | ctc | agc | ggg | ctg | ccg | gtg | ctg | ctc | aag | ggc | gtg | ctg | acc | gcc | 10386 |
| Arg | Glu | Leu | Ser 220 | Gly | Leu | Pro | Val | Leu 225 | Leu | Lys | Gly | Val | Leu 230 | Thr | Ala | |
| gac | ggt | gcc | cgg | cgg | gcg | ctc | gac | gcg | ggt | gcg | gac | ggg | atc | gtc | gtc | 10434 |
| Asp | Gly | Ala 235 | Arg | Arg | Ala | Leu | Asp 240 | Ala | Gly | Ala | Asp | Gly 245 | Ile | Val | Val | |
| tcc | aac | cac | ggc | ggc | cgg | cag | ctc | gac | ggc | gtg | ccg | gcg | acg | ctc | gac | 10482 |
| Ser | Asn 250 | His | Gly | Gly | Arg | Gln 255 | Leu | Asp | Gly | Val | Pro 260 | Ala | Thr | Leu | Asp | |
| gtg | ctg | ccc | gag | gtg | gtg | gcg | gcc | gtg | gcc | ggg | cgc | tgc | ccg | gtc | ctg | 10530 |
| Val | Leu | Pro | Glu | Val | Val 270 | Ala | Ala | Val | Ala | Gly 275 | Arg | Cys | Pro | Val | Leu 280 | |
| ctc | gac | ggc | ggc | gtg | cgg | cgc | ggc | cgc | gac | gtc | ctg | ctg | tgc | ctg | gcc | 10578 |
| Leu | Asp | Gly | Gly 285 | Val | Arg | Arg | Gly | Arg | Asp 290 | Val | Leu | Leu | Ser | Leu 295 | Ala | |
| ctc | ggc | gcc | gac | gcg | gtc | ctg | gta | ggc | cgc | ccg | gtg | ctg | tac | ggc | ctc | 10626 |
| Leu | Gly | Ala | Asp 300 | Ala | Val | Leu | Val | Gly 305 | Arg | Pro | Val | Leu | Tyr 310 | Gly | Leu | |
| gcg | gtc | ggc | ggc | acg | gcc | ggc | gtg | cgg | cac | gtg | ctc | gac | atc | ctc | gcg | 10674 |
| Ala | Val | Gly 315 | Gly | Thr | Ala | Gly | Val 320 | Arg | His | Val | Leu | Asp 325 | Ile | Leu | Ala | |
| ggg | gag | ctg | acc | gac | gac | atg | gcc | ctg | gcg | ggc | gtg | gcc | tgc | ccc | gcg | 10722 |
| Gly | Glu | Leu | Thr | Asp | Asp | Met 335 | Ala | Leu | Ala | Gly | Val 340 | Ala | Ser | Pro | Ala | |
| gac | gcc | ggc | gcg | gac | ctg | gcg | ggc | ccg | gtc | gcg | ccg | | | | | |
| Asp | Ala | Gly | Ala | Asp 345 | Leu 350 | Ala | Gly | Pro | Val | Ala 355 | Pro | | | | | |
| tag | aggcgggtcca | tacgactgcg | gcggccggga | | | | | | | | | | | | | 10791 |
| ataccgcggcc | gccgcaacgt | cgctctccag | ggacatctca | ggacggcacg | gccggctggc | | | | | | | | | | | 10851 |
| gtctctcggt | gcgctggccg | gcgaactggg | tccggtacag | ctcggcgtag | aggccaccgt | | | | | | | | | | | 10911 |
| gcgcgatcag | ctcgctgtgg | gtgccgcgct | cgacgacgcg | gccgtcgtag | atgacgagga | | | | | | | | | | | 10971 |
| tctggtcggc | gtccaggatc | gtggcgagcc | ggtgggagat | gacgagcgac | gtacgcccgg | | | | | | | | | | | 11031 |
| cgagcgccgt | gtccagggcc | cgctggatcg | ccgcctccga | tccggagtcc | agatgggagg | | | | | | | | | | | 11091 |
| tggcctcgtc | gagcaccacc | accggggggcg | atttgagcag | caggcggggc | agggcgaggg | | | | | | | | | | | 11151 |
| gctgcttctc | gccgcccag | agccggtagc | cgcgatcgcc | gaccaccgtg | tccagcccgt | | | | | | | | | | | 11211 |
| cgggcagcga | ggacaccatc | tcccagatgc | gggcccgcctc | gcaggccgcg | acgaggtcgc | | | | | | | | | | | 11271 |
| gctcgccggc | gtcgggacgg | ccgtagagca | ggttggcccg | gatggtgtcg | tggaacaggt | | | | | | | | | | | 11331 |

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| | | | | | | |
|-------------|------------|-------------|-------------|-------------|-------------|-------|
| gcgcgtcctg | cgtgaccacg | ccgatggact | cgtcagcga | gcgcaggggtg | aggctcgcgga | 11391 |
| cgctcgtggcc | ggcgatccgg | accgtgcccg | aggtgggtgtc | gtagaggcgc | ggcaccaggt | 11451 |
| gggtgatcgt | ggtcttgccg | gcgcccgaacg | ggccgaccag | ggcggtgagc | ttgccggccg | 11511 |
| gggcgagaaa | gctgatcccc | ttgagcaccg | gccgctccgc | ggtgccgtcg | gaggaccgct | 11571 |
| gggccacggg | ctccaacgag | gccagcgaga | cctcgtccgc | gcccggatag | cggaacacga | 11631 |
| cgttgctgaa | ctcgatgtcc | ggcgccggccg | agcggcccgg | ctcggcggcc | ggcagggcgc | 11691 |
| gggcgcccgg | gcgctccttg | acgagcgggt | cgaggctcag | cacctcgaag | acccggtcga | 11751 |
| agctcaccag | cgcggtgacg | acgtccacct | ggatgttggt | gagctgggttc | accgggcccgt | 11811 |
| acagctgcgc | cagcagggcg | accatggcga | caaggggtgcc | gatgccgagc | gtgccgtcga | 11871 |
| tgaccagggc | gccgccgaag | ccgtagacca | tgcccggtgt | caccgtgggtc | agcagcgtgg | 11931 |
| cgatgatgaa | cagcagccgt | gcgtgcacgc | ccatcgagat | ggcgatgtca | cgcaccccg | 11991 |
| cggcccgcgc | ggcgaaggcg | gtctcctcgc | tctccggccg | gccgtagagc | ttgaccagca | 12051 |
| tggcgccgga | gacgttgaa | cgctcgttca | tcacgagcc | cagctccgcg | tcgacctgca | 12111 |
| tgccgccgcg | ggccagccgc | tccagccggc | ccgcgatgag | cttgccgggc | aggaagaaca | 12171 |
| gcgggatgag | caccagccgc | accagccgca | tcgccagga | gaggtagaac | atcgcccgca | 12231 |
| tgaccagcac | gacggtcagg | accgtggaga | ccgtctgcgt | gatcatcgag | gtcatggcct | 12291 |
| gctcggccgc | gaccacgtcg | gtgttgagcc | ggctcaccag | cgaccccgctc | tgcgcccggg | 12351 |
| tgaagaacgc | cagcggctgg | cgcatgacgt | gggcgaacac | cttggtgcgc | aggctcgtaga | 12411 |
| tgagaccctg | cccgaacgcg | ccggaggcca | gcgtctgcac | gtggatcgcc | gccacgttga | 12471 |
| ccagggcgag | gccggccacc | accagcgaca | gcccgaccac | cacgtccagg | cggccggcca | 12531 |
| cgatgccgcg | gtcgatgac | tgttgagca | gcagcgggtt | ggcgaccgtg | agcgcggcgt | 12591 |
| cgaccacggg | catcagcagg | gcgacggcca | gggaccagcg | gtgtttcttc | gcgtacggga | 12651 |
| ggatgcgccg | caccgtgccg | ggcctgacct | tctgcacgg | tatgaggccg | tcgacgcgca | 12711 |
| gcccgatgac | gcccagatcc | gggcgctcga | tggttgccac | ggaaccttct | ctctcgcggg | 12771 |
| agcgggtgcg | ccggtcgtgc | cggcgcgtcc | ctagtgggag | tcgaggaact | cgaggatcgc | 12831 |
| ggcgttcacc | gcgtccggcc | gttccagata | gccgaggtgc | ccgcagcggg | atatctcgac | 12891 |
| caggtcgcag | tcggggatcg | cctcggccac | ctcggcggcc | aggtgcggcg | gcgtgatgag | 12951 |
| gtcgtcggcg | aacgagatca | ccgggcaggg | cgcggtgacc | gagcgcaggg | cggcgcgccg | 13011 |
| gtcaccgggc | agctcggccc | aggcctgccc | gccggccgag | acgcccgtgc | cggagagctc | 13071 |
| gaagatgtcg | agccactcgc | gcacggccac | gtcgtcgttg | agcgtcgcgc | gggagaacat | 13131 |
| cttgaagacc | gcggtcgcgg | cctcgtacgc | ggcgggcagc | gtgaccccg | tctccagcag | 13191 |
| gtcgatgtcg | gcctggttct | gcgcgcgcgc | ggccgcgtcg | ggccgggcca | gggtcgcgat | 13251 |

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| | | | | | | |
|------------|-------------|-------------|------------|-------------|-------------|-------|
| caggaccgcg | cagcgcacca | gctccggatg | gtcgacggcc | agtcctggg | cgatcatcgc | 13311 |
| gcccagcgag | gtgccgacga | tccggcaggg | cgcgagatcg | agggcctcga | tgagaccgcg | 13371 |
| ggtgtcggcg | gtcatgtcgg | cgagggagta | cttgccggcg | ggcacgtccg | agggcgggat | 13431 |
| gccacggctg | tcgaagacga | cggtggaata | tccgcctcgc | tgcaacgcgg | gcgtctggtg | 13491 |
| caccgtccag | gtctggccgg | cgcgcccga | tcccatgata | atgagaacgg | gctcgccggc | 13551 |
| tccggagcgg | cgatacgcca | ggcggacccc | gttggtggtg | acgaaaccgg | agcccgcggc | 13611 |
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| caccacgcga | ggaactcgtc | gatctgcttg | agctggtagg | tgctctcggt | gtaggtcgtc | 13731 |
| gccatgacgt | ggccttgcca | ggactcctcg | cccatggcgt | agatgtatcc | ggcgggtggcg | 13791 |
| ccgagctcgg | tcatgatcgc | gcccgcctgc | tccgcgttcg | atccggacag | ccgccgtgag | 13851 |
| gcgctcatct | tcttggtgac | cggtctggtc | agcagtcctt | tgtagagcca | gttgagcggc | 13911 |
| gcgccgtcgc | actccatgcc | gaggaacgcc | atgtcgacct | ggccgacgtg | gtcgcggtatg | 13971 |
| tagcggtaga | gcaccgggtc | gatgcccgc | gagtcggcgc | cgatgaagat | ggtgcgcccgc | 14031 |
| gccatccgca | cgaagtacgt | cgacttcccgc | cggatgtcca | gatcggcgtg | ctcgcccagg | 14091 |
| aacggcgtgg | cggtgaccgt | gcccgcgggg | aacggcacct | cgtcgaactc | ctcgacctcg | 14151 |
| acgacggtga | aaccgatccg | gcgcaggtac | agcgcgatcg | acgggtccgg | gaggttgccg | 14211 |
| cggctggtgc | gcggcacgac | aacggtgccg | atccggccgc | gcagctgcag | cagggctctcg | 14271 |
| agcacgatgt | ggtcctggtg | cccgtgcgtg | atgagcacca | ggtcgatgtg | gtcgggcagg | 14331 |
| tcgtcgagcg | tgtaccggtc | gcccgtggcg | ttgtcggtgc | tgatgaacgg | gtcggtgacc | 14391 |
| accgccgctt | gctcgggtctg | catcaccacg | caggcgtgac | cgtagtagcg | gaccgcggcg | 14451 |
| ccggactcga | tgtgccggtc | gggcgacagg | ctcggtcgtt | cggtagagcag | ggcatccagc | 14511 |
| gcggccgcgc | cggcgtcgtc | gagctccagc | gcctcgcgca | ggcggttgag | cgaggtgggc | 14571 |
| cgcacgcggg | cgtcgaagag | ctcggtcagc | ccgggatgcc | gcaggggcag | cggaaggctg | 14631 |
| agcacgccag | cccggggaag | ccgcggtgtg | ctgaggatga | acgggcgctc | caccccgtcg | 14691 |
| tcgagcgaga | gctgcaccga | ctgcgcgcgc | tcgtcgtagg | ccgggctgcg | gtagagcagc | 14751 |
| ggctcgagga | agtgcagcga | gggctggttg | ctggtgtcgt | acgcgatctc | caccagcccg | 14811 |
| ttgagcgcg | ccggcagccg | ggggtagagc | ggcgtcaggt | cgtagccgac | cgcgttctcg | 14871 |
| cggatcaggt | cctcggcctc | ggccaccgcg | gcggcgaagc | cgagcatgtc | ggcccgcctcg | 14931 |
| ttcttgatcg | tcttgagcag | ctcggcgacc | tcgtcgctgc | gggattcctc | gacggcgacg | 14991 |
| aagtagccgc | cgcgcattct | cggttctgtg | ctcgccgcca | cgtgcaccgg | cggcgactgc | 15051 |
| aggtacgact | cgagcagagg | cacctgcagg | aacgccaggt | tcattggaggc | cggcaccggt | 15111 |
| gccaccgtgt | gcagccacgc | gtagaaacgg | tcgacgagcg | gttcggcgat | gacgttgagg | 15171 |

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cgcagggtatc tcggctgatac ggcggttgcac atgtgaacct ctccatcctg atggcggggtg 15231
 cgcccgaggac gggcacgatac gggcgggagg gaatgcggcc tcggtacggc cggcgcgga 15291
 aacggcgcggt cgcctccctcc ggcggtgggag cgggtccacta tggcatcggc ccaggagccg 15351
 gtacagcggtg cagctgcgag gcccgatcgc gtcgaacgcc ctgtacaacc ggcgggtgca 15411
 cgcagtcgaa cagcggtgaa cgaccgaggc ggcggcgggc cgttgatcgg cgcggcgagc 15471
 gcccgcatag tgaatcgccg gaggggcctt ggagagccgg cccgccgttc cgggccatcg 15531
 ccggggcgccc gccctcaca accgatcgcc cggcgccgcc gggtcgcacg gaggtgccc 15590

atg tcc 15596
 Met Ser
 1

gag acc gac ctg tcc gcc gcc cgg cac acg ccc gag cag atc cgc tcc 15644
 Glu Thr Asp Leu Ser Ala Ala Arg His Thr Pro Glu Gln Ile Arg Ser
 5 10 15

tgg ctg atc gac cgg atc gcc tac tac gtg atg ctg ccg acc cag gag 15692
 Trp Leu Ile Asp Arg Ile Ala Tyr Tyr Val Met Leu Pro Thr Gln Glu
 20 25 30

atc gag ccg gac gtg tcc ctg gcc gag tac ggc ctg gac tcg gtg tac 15740
 Ile Glu Pro Asp Val Ser Leu Ala Glu Tyr Gly Leu Asp Ser Val Tyr
 35 40 45 50

gcg ttc gcg ctc tgc ggc gag atc gag gac acg ctc ggc atc ccg atc 15788
 Ala Phe Ala Leu Cys Gly Glu Ile Glu Asp Thr Leu Gly Ile Pro Ile
 55 60 65

gag ccg acc ctg ctg tgg gac gtc gac acc gtc gcc acc ctc acc gcc 15836
 Glu Pro Thr Leu Leu Trp Asp Val Thr Val Ala Thr Leu Thr Ala
 70 75 80

cac ctc gcc gac cgc gtc aac cga
 His Leu Ala Asp Arg Val Asn Arg
 85 90

taa gccggagggtg accgtc

gtg ccc acc cct gac 15894
 Val Pro Thr Pro Asp
 1 5

ctg cgc ccg ctc acg ccc gcc cag ctc gcc gtc tgg cac gcg cag cag 15942
 Leu Arg Pro Leu Thr Pro Ala Gln Leu Ala Val Trp His Ala Gln Gln
 10 15 20

ctc gcc ccg cac agc ccc gtc tat cag gtc ggc gag ttc gtc gag atc 15990
 Leu Ala Pro His Ser Pro Val Tyr Gln Val Gly Glu Phe Val Glu Ile
 25 30 35

gac ggc gag tgc gac ccc gat ctc ctg gtg gcg gcg ttg cgt cag gtc 16038
 Asp Gly Glu Cys Asp Pro Asp Leu Leu Val Ala Ala Leu Arg Gln Val
 40 45 50

atg ggc gag gcc gag agc gcc cgg ctg cgg ttc cgc gtg atc gac ggt 16086
 Met Gly Glu Ala Glu Ser Ala Arg Leu Arg Phe Arg Val Ile Asp Gly
 55 60 65

APPENDIX A

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| acg | ccg | tgg | cag | tac | gtc | gcc | gag | gac | ggc | gac | gac | ccg | atc | cag | gtc | 16134 |
| Thr | Pro | Trp | Gln | Tyr | Val | Ala | Glu | Asp | Gly | Asp | Asp | Pro | Ile | Gln | Val | |
| 70 | | | | | 75 | | | | | 80 | | | | | 85 | |
| gtg | gac | ctc | ggc | gcg | gcc | gcg | gac | ccg | cgc | gcc | gcg | gcg | ctg | ggc | cgc | 16182 |
| Val | Asp | Leu | Gly | Ala | Ala | Ala | Asp | Pro | Arg | Ala | Ala | Ala | Leu | Gly | Arg | |
| | | | 90 | | | | | | 95 | | | | | 100 | | |
| atg | gcg | gcc | gac | ctc | gac | cgg | ccc | ggc | gac | ctg | cgc | gac | ggc | ccg | ctc | 16230 |
| Met | Ala | Ala | Asp | Leu | Asp | Arg | Pro | Gly | Asp | Leu | Arg | Asp | Gly | Pro | Leu | |
| | | | 105 | | | | | 110 | | | | | 115 | | | |
| gtc | gag | cac | cac | gtc | tac | ctg | ctc | ggc | gag | ggc | cgg | gtc | atc | tgg | tac | 16278 |
| Val | Glu | His | His | Val | Tyr | Leu | Leu | Gly | Glu | Gly | Arg | Val | Ile | Trp | Tyr | |
| | | 120 | | | | | 125 | | | | | 130 | | | | |
| cac | cgc | gcg | cac | cac | atc | gtc | tgc | gac | ggc | ggc | agc | ctc | ggc | att | gtc | 16326 |
| His | Arg | Ala | His | His | Ile | Val | Cys | Asp | Gly | Gly | Ser | Leu | Gly | Ile | Val | |
| | 135 | | | | | 140 | | | | | 145 | | | | | |
| gcc | tcc | cgg | gtg | gcc | ggc | gtc | tat | tcc | gcg | ctc | gcg | gcc | ggg | ggg | gac | 16374 |
| Ala | Ser | Arg | Val | Ala | Gly | Val | Tyr | Ser | Ala | Leu | Ala | Ala | Gly | Gly | Asp | |
| 150 | | | | | 155 | | | | | 160 | | | | | 165 | |
| gtc | cgg | ccg | ggg | gcg | ctg | ccg | ccg | ctg | tgc | gtg | ttg | ctg | tgc | gcc | gcc | 16422 |
| Val | Arg | Pro | Gly | Ala | Leu | Pro | Pro | Leu | Ser | Val | Leu | Leu | Ser | Ala | Ala | |
| | | | | 170 | | | | | 175 | | | | | 180 | | |
| gac | gcc | tac | gag | cgc | tcc | ggc | gac | cgc | gac | cgg | gac | cgc | gag | cac | tgg | 16470 |
| Asp | Ala | Tyr | Glu | Arg | Ser | Gly | Asp | Arg | Asp | Arg | Asp | Arg | Glu | His | Trp | |
| | | | 185 | | | | | 190 | | | | | 195 | | | |
| cgc | tcc | gcg | ctg | gcg | ggc | ctg | ccc | gcc | gag | ctg | ctc | gcg | ggc | gcg | ggc | 16518 |
| Arg | Ser | Ala | Leu | Ala | Gly | Leu | Pro | Ala | Glu | Leu | Leu | Ala | Gly | Ala | Gly | |
| | | 200 | | | | | 205 | | | | | 210 | | | | |
| cgg | ccg | cgg | ccg | ctg | ccc | gga | ccg | ccg | gtg | cgc | cac | gag | cac | gac | ctc | 16566 |
| Arg | Pro | Arg | Pro | Leu | Pro | Gly | Pro | Pro | Val | Arg | His | Glu | His | Asp | Leu | |
| | 215 | | | | | 220 | | | | | 225 | | | | | |
| tcc | gcg | gcg | gag | gcg | ggc | cgg | ctg | cgc | gcg | ggg | gcg | cgg | cgg | ctg | cgg | 16614 |
| Ser | Ala | Ala | Glu | Ala | Gly | Arg | Leu | Arg | Ala | Gly | Ala | Arg | Arg | Leu | Arg | |
| 230 | | | | | 235 | | | | | 240 | | | | 245 | | |
| acc | agc | gtg | gcg | cag | gcc | ggc | atc | gcg | gcc | gcg | gcc | ctc | tac | cag | cac | 16662 |
| Thr | Ser | Val | Ala | Gln | Ala | Gly | Ile | Ala | Ala | Ala | Ala | Leu | Tyr | Gln | His | |
| | | | | 250 | | | | | 255 | | | | | 260 | | |
| cgg | ctc | acc | ggc | gcc | cgg | gac | gtg | ctg | gtg | gcg | gtg | ccc | gtc | gcc | ggc | 16710 |
| Arg | Leu | Thr | Gly | Ala | Arg | Asp | Val | Leu | Val | Ala | Val | Pro | Val | Ala | Gly | |
| | | | 265 | | | | | 270 | | | | | 275 | | | |
| cgc | acc | acc | cgc | ccg | gag | ttc | gac | gtg | ccc | ggc | atg | acg | tgc | aac | gtg | 16758 |
| Arg | Thr | Thr | Arg | Pro | Glu | Phe | Asp | Val | Pro | Gly | Met | Thr | Ser | Asn | Val | |
| | | 280 | | | | | 285 | | | | | 290 | | | | |
| gtg | ccg | gtg | cgc | ctc | gcg | gtc | acg | ccc | gcc | acg | acc | gtc | ggc | gag | ctg | 16806 |
| Val | Pro | Val | Arg | Leu | Ala | Val | Thr | Pro | Ala | Thr | Thr | Val | Gly | Glu | Leu | |
| | 295 | | | | | 300 | | | | | 305 | | | | | |
| ctg | cgc | gac | gtc | gcc | cgt | ggg | gtc | cgc | gac | ggc | ctg | cgg | cac | cag | cgg | 16854 |
| Leu | Arg | Asp | Val | Ala | Arg | Gly | Val | Arg | Asp | Gly | Leu | Arg | His | Gln | Arg | |
| 310 | | | | | 315 | | | | | 320 | | | | | 325 | |

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| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| tac | ccg | tac | ccg | aac | atc | gtg | gac | gac | ctc | ggc | ctg | gcc | gac | cgt | gcc | 16902 |
| Tyr | Pro | Tyr | Pro | Asn | Ile | Val | Asp | Asp | Leu | Gly | Leu | Ala | Asp | Arg | Ala | |
| | | | | 330 | | | | | 335 | | | | | 340 | | |
| gcg | ctg | cgc | ccg | gtg | acc | gtc | aac | gcc | ctg | gcg | ctg | gga | cgg | ccg | ctg | 16950 |
| Ala | Leu | Arg | Pro | Val | Thr | Val | Asn | Ala | Leu | Ala | Leu | Gly | Arg | Pro | Leu | |
| | | | 345 | | | | | 350 | | | | | 355 | | | |
| cgc | ttc | ggc | tcg | gcg | gtg | ggc | gtg | cgc | tcc | ggc | ctg | tcg | gcg | ggc | ccg | 16998 |
| Arg | Phe | Gly | Ser | Ala | Val | Gly | Val | Arg | Ser | Gly | Leu | Ser | Ala | Gly | Pro | |
| | | 360 | | | | | 365 | | | | | 370 | | | | |
| gtg | gac | gac | gtc | acc | atc | ggc | ctc | tac | gaa | aag | gtc | agc | ggc | ggc | ggc | 17046 |
| Val | Asp | Asp | Val | Thr | Ile | Gly | Leu | Tyr | Glu | Lys | Val | Ser | Gly | Gly | Gly | |
| | 375 | | | | | 380 | | | | | 385 | | | | | |
| atg | cag | acg | atc | gcc | gag | ctg | aac | ccc | ggg | cgc | acg | gac | cgc | ccg | gac | 17094 |
| Met | Gln | Thr | Ile | Ala | Glu | Leu | Asn | Pro | Gly | Arg | Thr | Asp | Arg | Pro | Asp | |
| | 390 | | | | 395 | | | | | 400 | | | | | 405 | |
| gcg | gcg | gag | gtc | tcc | cgc | tgg | ttc | cgt | acg | ctg | ctg | cgc | ggg | ctg | gcc | 17142 |
| Ala | Ala | Glu | Val | Ser | Arg | Trp | Phe | Arg | Thr | Leu | Leu | Arg | Gly | Leu | Ala | |
| | | | | 410 | | | | 415 | | | | | | 420 | | |
| gag | agc | gac | gcc | ggc | gac | ccg | gtg | gcc | cgc | atc | gac | atc | gtc | gac | gag | 17190 |
| Glu | Ser | Asp | Ala | Gly | Asp | Pro | Val | Ala | Arg | Ile | Asp | Ile | Val | Asp | Glu | |
| | | | 425 | | | | | 430 | | | | | 435 | | | |
| ccc | gag | cgc | cgc | cgg | ctg | ctg | gac | gag | tgg | aac | gcc | acc | gcg | gcg | ccg | 17238 |
| Pro | Glu | Arg | Arg | Arg | Leu | Leu | Asp | Glu | Trp | Asn | Ala | Thr | Ala | Ala | Pro | |
| | | 440 | | | | | 445 | | | | | 450 | | | | |
| tcg | agc | gac | acc | gtc | ctc | gcg | cgt | ttc | gag | gag | cag | gcg | gcg | cgt | acg | 17286 |
| Ser | Ser | Asp | Thr | Val | Leu | Ala | Arg | Phe | Glu | Glu | Gln | Ala | Ala | Arg | Thr | |
| | 455 | | | | | 460 | | | | | 465 | | | | | |
| ccc | gag | gcg | ccc | gcc | gtc | gtc | tgc | ggc | gac | gtg | acg | gtc | acc | tac | gcc | 17334 |
| Pro | Glu | Ala | Pro | Ala | Val | Val | Cys | Gly | Asp | Val | Thr | Val | Thr | Tyr | Ala | |
| | 470 | | | | 475 | | | | | 480 | | | | | 485 | |
| gag | ctg | gag | gcc | ggc | gcc | aac | cgg | ctc | gcc | cgc | gtc | ctt | cgc | gcg | cgc | 17382 |
| Glu | Leu | Glu | Ala | Gly | Ala | Asn | Arg | Leu | Ala | Arg | Val | Leu | Arg | Ala | Arg | |
| | | | 490 | | | | | | 495 | | | | | 500 | | |
| ggc | gcc | gga | ccg | gag | tcg | gtc | gtg | gcc | ctc | tgc | ctg | ccc | cgc | ggc | ccc | 17430 |
| Gly | Ala | Gly | Pro | Glu | Ser | Val | Val | Ala | Leu | Cys | Leu | Pro | Arg | Gly | Pro | |
| | | | 505 | | | | | 510 | | | | | 515 | | | |
| gag | gtc | gtg | acc | ggc | atc | ctc | gcc | gcc | tgg | aag | gcg | ggc | gcc | gcc | tac | 17478 |
| Glu | Val | Val | Thr | Gly | Ile | Leu | Ala | Ala | Trp | Lys | Ala | Gly | Ala | Ala | Tyr | |
| | | 520 | | | | | 525 | | | | | 530 | | | | |
| ctg | ccg | gtc | gac | acc | gaa | ctg | ccg | gcc | gag | cgc | gtc | gcc | tat | ctg | ctc | 17526 |
| Leu | Pro | Val | Asp | Thr | Glu | Leu | Pro | Ala | Glu | Arg | Val | Ala | Tyr | Leu | Leu | |
| | 535 | | | | | 540 | | | | | 545 | | | | | |
| ggc | gac | agc | gcc | gcc | gcc | gtc | cgc | ctc | ggc | acc | gcc | gag | acg | ctc | gcc | 17574 |
| Gly | Asp | Ser | Ala | Ala | Ala | Val | Arg | Leu | Gly | Thr | Ala | Glu | Thr | Leu | Ala | |
| | 550 | | | | 555 | | | | | 560 | | | | | 565 | |
| gcc | ctc | ccg | gac | ggc | ccc | gcc | gcc | gac | gtc | gac | gtc | cac | gca | ccg | gag | 17622 |
| Ala | Leu | Pro | Asp | Gly | Pro | Ala | Ala | Asp | Val | Asp | Val | His | Ala | Pro | Glu | |
| | | | | 570 | | | | | 575 | | | | | 580 | | |

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|---|-------|
| atc gcc cgg gaa tcg ccc tcg ccc ctg cgg ctc gag ccc ttg ccg gat Ile Ala Arg Glu Ser Pro Ser Pro Leu Arg Leu Glu Pro Leu Pro Asp 585 590 595 | 17670 |
| cag ttg gcg tat gtg att tat acg tcg ggt tcg acg ggg ttg agc aag Gln Leu Ala Tyr Val Ile Tyr Thr Ser Gly Ser Thr Gly Leu Ser Lys 600 605 610 | 17718 |
| ggt gtc ggt gtt tcg cat ggt ggg ttg gcg aat tat gtg ggt tgg gcg Gly Val Gly Val Ser His Gly Gly Leu Ala Asn Tyr Val Gly Trp Ala 615 620 625 | 17766 |
| tcg gtt ttg tat ggg ggt ttg tcg gcg ccg ttg cat tct tcg ttg gct Ser Val Leu Tyr Gly Gly Leu Ser Ala Pro Leu His Ser Ser Leu Ala 630 635 640 645 | 17814 |
| ttt gat ttg acg gtg acg agt gtt ttt gtg ccg ttg gtg tgt ggt ggt Phe Asp Leu Thr Val Thr Ser Val Phe Val Pro Leu Val Cys Gly Gly 650 655 660 | 17862 |
| tcg gtg gtg gtg tcg gcg gcc ggt ggt ggt ccg ggt ttg gcg tcg ttg Ser Val Val Val Ser Ala Ala Gly Gly Gly Arg Gly Leu Ala Ser Leu 665 670 675 | 17910 |
| ttg gcg gct ggt gat ggt ttt tcg ttg gtg aag gtg gtg ccg ggt cat Leu Ala Ala Gly Asp Gly Phe Ser Leu Val Lys Val Val Pro Gly His 680 685 690 | 17958 |
| ttg cgt ttg ctg gcg gag ttg gtg ccg gcg ggt gag atg gcg gcg gtg Leu Arg Leu Leu Ala Glu Leu Val Pro Ala Gly Glu Met Ala Ala Val 695 700 705 | 18006 |
| ggt tcg ttg gtg gcc ggt ggt gag gtt ttg gcc ggt ggt gat gtg cgt Gly Ser Leu Val Ala Gly Gly Glu Val Leu Ala Gly Gly Asp Val Arg 710 715 720 725 | 18054 |
| gag tgg ttg tcg cgg gtg ccg ggt tcg gtg gtg gtg aat gag tac ggg Glu Trp Leu Ser Arg Val Pro Gly Ser Val Val Val Asn Glu Tyr Gly 730 735 740 | 18102 |
| ccg acg gag acc gtg gtg ggt tgt tcg gtt ttc tcg gtg gcc gcg ggt Pro Thr Glu Thr Val Val Gly Cys Ser Val Phe Ser Val Ala Ala Gly 745 750 755 | 18150 |
| gat gtg gtt ggt gat gtg gtg ccg gtt ggc cgg ccg gtg gcg aat acg Asp Val Val Gly Asp Val Val Pro Val Gly Arg Pro Val Ala Asn Thr 760 765 770 | 18198 |
| cgt ttg ttt gtt ttg gat gag ggt ttg cgg ccg gtt ccg gct ggg gtg Arg Leu Phe Val Leu Asp Glu Gly Leu Arg Pro Val Pro Ala Gly Val 775 780 785 | 18246 |
| gcg ggt gag ttg tat gtg gct ggt tcg cag gtg gcg ccg ggt tat gtg Ala Gly Glu Leu Tyr Val Ala Gly Ser Gln Val Ala Arg Gly Tyr Val 790 795 800 805 | 18294 |
| ggt cgt tct ggt ttg acg gct tcg cgt ttt gtg gcg tgt ccg ttc ggt Gly Arg Ser Gly Leu Thr Ala Ser Arg Phe Val Ala Cys Pro Phe Gly 810 815 820 | 18342 |
| gtg ggt gag cgg atg tat cgc acg ggt gat gtg gtg ccg ttg gcc ggt Val Gly Glu Arg Met Tyr Arg Thr Gly Asp Val Val Arg Leu Ala Gly 825 830 835 | 18390 |

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|--|-------|
| ggt gat ctg gtg ttt gtg ggc cgg gtc gat gag cag gtg aag att cgt | 18438 |
| Gly Asp Leu Val Phe Val Gly Arg Val Asp Glu Gln Val Lys Ile Arg | |
| 840 845 850 | |
| ggt tat cgg gtg gag ccg gat gag gtg cgg ttg gtg gtg gcg ggg cat | 18486 |
| Gly Tyr Arg Val Glu Pro Asp Glu Val Arg Leu Val Val Ala Gly His | |
| 855 860 865 | |
| ccg cgg gta gcg ggt gcg gcg gtg gtg gct cgg ccg gat gcg gtg ggt | 18534 |
| Pro Arg Val Ala Gly Ala Ala Val Val Ala Arg Pro Asp Ala Val Gly | |
| 870 875 880 885 | |
| gag cgg cag ttg gtg gcc tat gtg gtc gct gcc ggt gag ccg gcc ggg | 18582 |
| Glu Arg Gln Leu Val Ala Tyr Val Val Ala Ala Gly Glu Pro Ala Gly | |
| 890 895 900 | |
| ttg gcg gag tcg gta cgc gcc cac gtc gcc gag cgc ctg ccc gaa tac | 18630 |
| Leu Ala Glu Ser Val Arg Ala His Val Ala Glu Arg Leu Pro Glu Tyr | |
| 905 910 915 | |
| atg gtc ccg gcc gcc gtc gtg acc ctc gac gag atc ccg ctg acc gtg | 18678 |
| Met Val Pro Ala Ala Val Val Thr Leu Asp Glu Ile Pro Leu Thr Val | |
| 920 925 930 | |
| aac ggc aag gtc gac cgc gcc gcc ctg ccc gag ccc ggc ccc gtc gcc | 18726 |
| Asn Gly Lys Val Asp Arg Ala Ala Leu Pro Glu Pro Gly Pro Val Ala | |
| 935 940 945 | |
| acc ggc aac gcc gac cgc gag ccc acg acc gag cgc gaa tcg ctg ctc | 18774 |
| Thr Gly Asn Ala Asp Arg Glu Pro Thr Thr Glu Arg Glu Ser Leu Leu | |
| 950 955 960 965 | |
| tgc ggc gcc ttc gcc gac gtg ctc ggc atc gag cgg gtc ggc gtc gac | 18822 |
| Cys Gly Ala Phe Ala Asp Val Leu Gly Ile Glu Arg Val Gly Val Asp | |
| 970 975 980 | |
| gac gac ttc ttc agc ctc ggc ggc cat tcc ctg ctc gcc acc agc ctg | 18870 |
| Asp Asp Phe Phe Ser Leu Gly Gly His Ser Leu Leu Ala Thr Ser Leu | |
| 985 990 995 | |
| gtg agc cgg gta cgc ctc gtg ctc ggt gag gaa ctg ccc atc gag | 18915 |
| Val Ser Arg Val Arg Leu Val Leu Gly Glu Glu Leu Pro Ile Glu | |
| 1000 1005 1010 | |
| gag ctc ttc gcc acg ccc acc ccc gcc gag ctg gcg gcc tgg ctg | 18960 |
| Glu Leu Phe Ala Thr Pro Thr Pro Ala Glu Leu Ala Ala Trp Leu | |
| 1015 1020 1025 | |
| caa cgc aac gcg gac cgg ccg caa ccg gcc cgg ccg gcg ctg cgc | 19005 |
| Gln Arg Asn Ala Asp Arg Pro Gln Pro Ala Arg Pro Ala Leu Arg | |
| 1030 1035 1040 | |
| ccg atg cac gaa agg gaa acg acc gca | |
| Pro Met His Glu Arg Glu Thr Thr Ala | |
| 1045 1050 | |
| tga ccccgatgtc gtacgccag cgccgtctct | 19065 |
| ggttccagct gcgggtcgag ggccccgacg ccacgtacaa cagtcccgcc gtccctgcgcc | 19125 |
| tcaccggcga gctcgacacc gccgcctgg agcacgcgt gcgcgacgtc ctcgaacggc | 19185 |

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|------------|------------|-------------|------------|-------------|-------------|-------|
| acgaggtcct | gcgcacggtc | tatcccagacg | tggcgggcga | gccgcggcag | cgcggtgttc | 19245 |
| gcccggacga | catggtgtgg | gagctgccca | cgacccgggt | gtccggtgcc | ggcgcgggcg | 19305 |
| acgaccggct | cgtcacgctc | gacgagctgc | cctgggaccg | cccgggtgctc | gacctgccgt | 19365 |
| cgccccgacc | ggccggcccg | gaaccggacg | gcgagatcac | cgtcgacgag | ctgcccggcg | 19425 |
| cgatcgcccc | ggtggcgggc | caccccttcg | acctctccat | cgagatcccc | gtgcgggcgc | 19485 |
| ggctgttcgc | cctgggcccc | cggcaccacg | tctctgtcgt | cgtgctccac | cacatcgcca | 19545 |
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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

| | | | | | | |
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| tcgtcgaaga | cctcgcaccc | acccgctccc | tcgcccgcga | ccccctcttc | caggtcatga | 32805 |
| tgacctgca | gagcgcgtcg | gcggaacgaag | agccgctggc | gctcgccggg | ctgcggggtca | 32865 |
| ccgacctccc | ggccgggggag | acacccgcga | aggtggacct | cgacctgacg | ctgcacgagg | 32925 |
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APPENDIX A

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APPENDIX A

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APPENDIX A

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atg atc 39718
 Met Ile
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 Gly Pro Ser Ala Thr Tyr Asn Ile Pro Leu Val Leu Gly Leu Thr Gly
 20 25 30
 acc gtc gac gcc gcc gcc ctg gaa acc gcc ctg cgc gac gtg ctg gag 39862
 Thr Val Asp Ala Ala Ala Leu Glu Thr Ala Leu Arg Asp Val Leu Glu
 35 40 45 50
 cgg cac gag gtg ctg cgt acc gtc tat ccg gac gcc ggc ggc gag ccg 39910

APPENDIX A

| | | | | | | | | | | | | | | | | |
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| Arg | His | Glu | Val | Leu | Arg | Thr | Val | Tyr | Pro | Asp | Ala | Gly | Gly | Glu | Pro | |
| | | | | 55 | | | | | 60 | | | | | 65 | | |
| cac | cag | cgg | atc | ctg | ccg | ctc | ggc | gag | acc | ggc | ttc | ggc | ctg | cgg | gtc | 39958 |
| His | Gln | Arg | Ile | Leu | Pro | Leu | Gly | Glu | Thr | Gly | Phe | Gly | Leu | Arg | Val | |
| | | | 70 | | | | | 75 | | | | | 80 | | | |
| gcc | gag | gtg | acg | gac | ggc | gag | ctg | gac | gcg | gcc | gtc | gcg | gac | gcc | acc | 40006 |
| Ala | Glu | Val | Thr | Asp | Gly | Glu | Leu | Asp | Ala | Ala | Val | Ala | Asp | Ala | Thr | |
| | | 85 | | | | | 90 | | | | | 95 | | | | |
| ggg | cac | gcc | ttc | gac | ctc | gcg | acc | gag | atc | ccg | gtc | cgg | gcc | tcg | ctg | 40054 |
| Gly | His | Ala | Phe | Asp | Leu | Ala | Thr | Glu | Ile | Pro | Val | Arg | Ala | Ser | Leu | |
| | 100 | | | | | 105 | | | | | 110 | | | | | |
| ctc | acc | gtc | gag | ccg | ggc | cgg | cac | gtc | ctg | gcg | ctg | gtg | ctg | cac | cac | 40102 |
| Leu | Thr | Val | Glu | Pro | Gly | Arg | His | Val | Leu | Ala | Leu | Val | Leu | His | His | |
| 115 | | | | | 120 | | | | | 125 | | | | | 130 | |
| atc | gcg | gcc | gac | ggc | tgg | tcg | atg | ggg | ccg | ctg | ctg | cgc | gac | ctg | tcc | 40150 |
| Ile | Ala | Ala | Asp | Gly | Trp | Ser | Met | Gly | Pro | Leu | Leu | Arg | Asp | Leu | Ser | |
| | | | | 135 | | | | | 140 | | | | | 145 | | |
| acc | gcg | tac | acg | gcc | cgg | ctg | gcc | ggc | ggg | gaa | ccg | gcc | tgg | tcg | ccg | 40198 |
| Thr | Ala | Tyr | Thr | Ala | Arg | Leu | Ala | Gly | Gly | Glu | Pro | Ala | Trp | Ser | Pro | |
| | | | 150 | | | | | 155 | | | | | 160 | | | |
| ctg | ccg | gtc | cag | tac | gcg | gac | tac | gcg | ctg | tgg | cag | cag | gag | gtg | ctc | 40246 |
| Leu | Pro | Val | Gln | Tyr | Ala | Asp | Tyr | Ala | Leu | Trp | Gln | Gln | Glu | Val | Leu | |
| | | 165 | | | | | 170 | | | | | 175 | | | | |
| ggc | gcc | ggt | gac | gac | ccg | gag | agc | ctc | ctg | cgc | gag | cag | gtc | ggc | tat | 40294 |
| Gly | Ala | Gly | Asp | Asp | Pro | Glu | Ser | Leu | Leu | Arg | Glu | Gln | Val | Gly | Tyr | |
| | 180 | | | | | 185 | | | | | 190 | | | | | |
| tgg | cgg | tcg | gcg | ctc | gcc | gga | gcc | ccc | gag | gag | ctg | cgc | ctg | ccg | gcc | 40342 |
| Trp | Arg | Ser | Ala | Leu | Ala | Gly | Ala | Pro | Glu | Glu | Leu | Arg | Leu | Pro | Ala | |
| 195 | | | | | 200 | | | | 205 | | | | | | 210 | |
| gac | cac | cgg | cgc | ccg | ccc | gtg | tcg | tcg | tcc | cgg | gcg | cac | atg | gcc | gag | 40390 |
| Asp | His | Arg | Arg | Pro | Pro | Val | Ser | Ser | Ser | Arg | Ala | His | Met | Ala | Glu | |
| | | | | 215 | | | | | 220 | | | | | 225 | | |
| ttc | gcc | gtg | ccg | gcc | gcc | gcc | cac | ggc | gac | ctg | acc | gcc | ctc | acc | cgc | 40438 |
| Phe | Ala | Val | Pro | Ala | Ala | Ala | His | Gly | Asp | Leu | Thr | Ala | Leu | Thr | Arg | |
| | | | 230 | | | | | 235 | | | | | 240 | | | |
| gag | ctc | ggc | gcc | acg | ctc | ttc | atg | gcc | gtg | cac | gcg | gcg | acc | gcc | atg | 40486 |
| Glu | Leu | Gly | Ala | Thr | Leu | Phe | Met | Ala | Val | His | Ala | Ala | Thr | Ala | Met | |
| | | 245 | | | | | 250 | | | | | 255 | | | | |
| gtg | ctt | tcc | ggg | ctg | ggc | gcg | ggc | gac | gac | ctg | ccg | atc | ggc | acg | gtg | 40534 |
| Val | Leu | Ser | Gly | Leu | Gly | Ala | Gly | Asp | Asp | Leu | Pro | Ile | Gly | Thr | Val | |
| | 260 | | | | 265 | | | | | | 270 | | | | | |
| gtg | gcc | ggc | cgc | acc | gac | gcc | ggc | ctc | gac | gac | ctc | gtc | ggc | tgc | ttc | 40582 |
| Val | Ala | Gly | Arg | Thr | Asp | Ala | Gly | Leu | Asp | Asp | Leu | Val | Gly | Cys | Phe | |
| | 275 | | | | 280 | | | | 285 | | | | | | 290 | |
| gtc | aac | aac | ctg | gtg | atc | cgg | gcc | gac | ctg | acc | ggc | gac | ccg | acc | ttc | 40630 |
| Val | Asn | Asn | Leu | Val | Ile | Arg | Ala | Asp | Leu | Thr | Gly | Asp | Pro | Thr | Phe | |
| | | | | 295 | | | | | 300 | | | | | 305 | | |
| gcg | gac | ctg | ctg | cgg | cag | gtc | cgc | gag | cgg | gcc | ctc | gac | gcg | tac | ggc | 40678 |

APPENDIX A

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Ala | Asp | Leu | Leu | Arg | Gln | Val | Arg | Glu | Arg | Ala | Leu | Asp | Ala | Tyr | Gly | |
| | | | 310 | | | | | 315 | | | | | 320 | | | |
| cac | cag | gac | gtg | ccg | ttc | gag | aag | ctc | gtc | gag | gag | ctc | gcg | ccg | tcg | 40726 |
| His | Gln | Asp | Val | Pro | Phe | Glu | Lys | Leu | Val | Glu | Glu | Leu | Ala | Pro | Ser | |
| | | | 325 | | | | 330 | | | | | 335 | | | | |
| cgg | tcg | ctg | agc | cgc | cac | ccg | ctg | ttc | cag | gtg | gcc | gtc | gcc | gtg | gag | 40774 |
| Arg | Ser | Leu | Ser | Arg | His | Pro | Leu | Phe | Gln | Val | Ala | Val | Ala | Val | Glu | |
| | | | 340 | | | | 345 | | | | | 350 | | | | |
| acc | gac | gac | ctg | atc | ggc | ggg | cgc | ggc | ggc | ggg | ccc | gcc | ctg | cgg | ctg | 40822 |
| Thr | Asp | Asp | Leu | Ile | Gly | Gly | Arg | Gly | Gly | Gly | Pro | Ala | Leu | Arg | Leu | |
| | | | 355 | | 360 | | | | | 365 | | | | | 370 | |
| ccc | ggc | ctc | ggc | atc | gag | gtg | ctg | ccc | ggc | gag | ccc | tcc | gct | cgc | gac | 40870 |
| Pro | Gly | Leu | Gly | Ile | Glu | Val | Leu | Pro | Gly | Glu | Pro | Ser | Ala | Arg | Asp | |
| | | | | 375 | | | | | 380 | | | | | 385 | | |
| ctc | gac | ctc | gac | ctg | gtg | gtg | cgc | gag | acg | ttc | gac | gcc | gag | gga | cgc | 40918 |
| Leu | Asp | Leu | Asp | Leu | Val | Val | Arg | Glu | Thr | Phe | Asp | Ala | Glu | Gly | Arg | |
| | | | 390 | | | | | 395 | | | | | 400 | | | |
| ccc | gcc | ggg | ctc | acc | ggg | gca | ctg | atc | ggc | gcg | gcc | ggc | ctg | ttc | gac | 40966 |
| Pro | Ala | Gly | Leu | Thr | Gly | Ala | Leu | Ile | Gly | Ala | Ala | Gly | Leu | Phe | Asp | |
| | | 405 | | | | | 410 | | | | | 415 | | | | |
| gcc | gcg | tcg | gtg | gag | cgg | ctg | gcc | gcg | ctg | ctg | gcc | cgc | gcg | ctc | gag | 41014 |
| Ala | Ala | Ser | Val | Glu | Arg | Leu | Ala | Ala | Leu | Leu | Ala | Arg | Ala | Leu | Glu | |
| | | | 420 | | | 425 | | | | | 430 | | | | | |
| gcg | ctg | gcc | gcc | gac | ccg | cgc | acg | cgc | gcc | ggc | gac | ctc | gac | ctg | ctc | 41062 |
| Ala | Leu | Ala | Ala | Asp | Pro | Arg | Thr | Arg | Ala | Gly | Asp | Leu | Asp | Leu | Leu | |
| | | | 435 | | 440 | | | | | 445 | | | | 450 | | |
| tcc | ccg | gcg | gac | cgc | cgg | ctg | atc | ctg | cgc | ggc | tgg | aac | gac | acc | gcg | 41110 |
| Ser | Pro | Ala | Asp | Arg | Arg | Leu | Ile | Leu | Arg | Gly | Trp | Asn | Asp | Thr | Ala | |
| | | | | 455 | | | | | 460 | | | | | 465 | | |
| gct | ccg | gcg | ccg | gcc | gga | ctg | gtg | ccg | gac | ctg | ttc | gcc | gcc | cag | gcc | 41158 |
| Ala | Pro | Ala | Pro | Ala | Gly | Leu | Val | Pro | Asp | Leu | Phe | Ala | Ala | Gln | Ala | |
| | | | 470 | | | | | 475 | | | | | 480 | | | |
| gcg | cgc | acc | ccg | gac | gcg | gtc | gcg | gtc | gcc | ggg | ccc | gac | cgg | gag | ctg | 41206 |
| Ala | Arg | Thr | Pro | Asp | Ala | Val | Ala | Val | Ala | Gly | Pro | Asp | Arg | Glu | Leu | |
| | | | 485 | | | 490 | | | | | | 495 | | | | |
| acc | tat | gcc | gag | ctg | gac | gag | cgc | tcc | ggc | cgc | ctc | gcg | cgc | tgg | ctg | 41254 |
| Thr | Tyr | Ala | Glu | Leu | Asp | Glu | Arg | Ser | Gly | Arg | Leu | Ala | Arg | Trp | Leu | |
| | | 500 | | | | 505 | | | | | 510 | | | | | |
| atc | cgg | cgc | ggg | gtc | gcc | gcc | gac | acc | cgg | gtc | gcg | ctg | gtg | ctg | gag | 41302 |
| Ile | Arg | Arg | Gly | Val | Ala | Ala | Asp | Thr | Arg | Val | Ala | Leu | Val | Leu | Glu | |
| | | | 515 | | 520 | | | | | 525 | | | | | 530 | |
| cgc | tcc | gcg | gag | ctg | ccg | gtg | gcg | atc | ctc | gcc | gtg | ctc | aag | gcc | ggc | 41350 |
| Arg | Ser | Ala | Glu | Leu | Pro | Val | Ala | Ile | Leu | Ala | Val | Leu | Lys | Ala | Gly | |
| | | | | 535 | | | | 540 | | | | | | 545 | | |
| ggc | gcg | tat | ctg | ccg | atc | gat | ccg | gcg | cag | ccg | ccg | cgc | cgc | atc | gcc | 41398 |
| Gly | Ala | Tyr | Leu | Pro | Ile | Asp | Pro | Ala | Gln | Pro | Pro | Arg | Arg | Ile | Ala | |
| | | | 550 | | | | | 555 | | | | | 560 | | | |
| gac | atc | gtg | gcc | gac | gcc | gcc | ccg | gcg | ctc | gtg | ctg | gcc | cag | gcg | tcc | 41446 |

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| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Asp | Ile | Val | Ala | Asp | Ala | Ala | Pro | Ala | Leu | Val | Leu | Ala | Gln | Ala | Ser | |
| | 565 | | | | | | 570 | | | | | 575 | | | | |
| acc | gcc | gac | gtc | gtg | gcc | gac | gcc | tct | ccg | gcg | ctc | gtg | ctg | gcc | ccg | 41494 |
| Thr | Ala | Asp | Val | Val | Ala | Asp | Ala | Ser | Pro | Ala | Leu | Val | Leu | Ala | Pro | |
| | 580 | | | | | 585 | | | | | 590 | | | | | |
| gcg | tcc | gac | ggg | gtg | ccc | acc | ggc | gcc | gtg | ccc | gtg | cac | ctg | ctc | gac | 41542 |
| Ala | Ser | Asp | Gly | Val | Pro | Thr | Gly | Ala | Val | Pro | Val | His | Leu | Leu | Asp | |
| 595 | | | | | 600 | | | | | 605 | | | | | 610 | |
| tcg | ccc | gcc | gtg | cgt | gac | gag | gtc | gcg | cag | tgc | ccg | gcc | ggg | gcc | gtg | 41590 |
| Ser | Pro | Ala | Val | Arg | Asp | Glu | Val | Ala | Gln | Cys | Pro | Ala | Gly | Ala | Val | |
| | | | | 615 | | | | | 620 | | | | | 625 | | |
| acc | gac | gcc | gac | cgg | cgg | ggc | gtc | ctg | ctc | ggc | ggg | cac | gcg | gcc | tac | 41638 |
| Thr | Asp | Ala | Asp | Arg | Arg | Gly | Val | Leu | Leu | Gly | Gly | His | Ala | Ala | Tyr | |
| | | | 630 | | | | | 635 | | | | | 640 | | | |
| gtc | atc | tac | acc | tcg | gga | tcg | acc | gga | cgc | ccc | aag | ggg | gtc | gtc | gtt | 41686 |
| Val | Ile | Tyr | Thr | Ser | Gly | Ser | Thr | Gly | Arg | Pro | Lys | Gly | Val | Val | Val | |
| | | 645 | | | | | 650 | | | | | 655 | | | | |
| tcg | cac | gac | gcg | ttc | gcg | aac | ctc | gtc | ctg | gac | cag | cgc | cgg | ctc | ggc | 41734 |
| Ser | His | Asp | Ala | Phe | Ala | Asn | Leu | Val | Leu | Asp | Gln | Arg | Arg | Leu | Gly | |
| | 660 | | | | | 665 | | | | | 670 | | | | | |
| atc | ggg | ccg | ggc | agc | cgg | gtg | gcg | cag | ttc | gcc | tcg | ccg | ggc | ttc | gac | 41782 |
| Ile | Gly | Pro | Gly | Ser | Arg | Val | Ala | Gln | Phe | Ala | Ser | Pro | Gly | Phe | Asp | |
| 675 | | | | | 680 | | | | | 685 | | | | | 690 | |
| atg | ttc | gtc | gac | gag | tgg | tcg | atg | gcg | ctg | ctc | gcc | ggc | gcc | gcc | ctc | 41830 |
| Met | Phe | Val | Asp | Glu | Trp | Ser | Met | Ala | Leu | Leu | Ala | Gly | Ala | Ala | Leu | |
| | | | | 695 | | | | | 700 | | | | | 705 | | |
| gtg | atc | gtg | ccg | ccg | gag | cgc | cgg | ctc | ggc | gcg | gac | ctc | gcc | gcg | ttc | 41878 |
| Val | Ile | Val | Pro | Pro | Glu | Arg | Arg | Leu | Gly | Ala | Asp | Leu | Ala | Ala | Phe | |
| | | | 710 | | | | | 715 | | | | | 720 | | | |
| ctc | acc | gag | cgc | ggg | gtc | acc | cac | gcc | acg | ctg | ccg | ccg | gcg | gtg | gtg | 41926 |
| Leu | Thr | Glu | Arg | Gly | Val | Thr | His | Ala | Thr | Leu | Pro | Pro | Ala | Val | Val | |
| | | 725 | | | | | 730 | | | | | 735 | | | | |
| gcg | acg | ctg | ccg | gag | gag | tcg | ctg | cca | cgc | tcg | ttc | gtg | ctg | gac | atc | 41974 |
| Ala | Thr | Leu | Pro | Glu | Glu | Ser | Leu | Pro | Arg | Ser | Phe | Val | Leu | Asp | Ile | |
| | 740 | | | | | 745 | | | | | 750 | | | | | |
| ggc | ggc | gac | gcg | ctg | ccg | gac | gac | ctg | gcc | cgc | cgg | tgg | ctg | cgc | gac | 42022 |
| Gly | Gly | Asp | Ala | Leu | Pro | Asp | Asp | Leu | Ala | Arg | Arg | Trp | Leu | Arg | Asp | |
| 755 | | | | | 760 | | | | | 765 | | | | | 770 | |
| ggc | cgg | tgg | ctg | ggc | aac | tcg | tac | ggc | ccg | acg | gag | acc | acg | gtc | aac | 42070 |
| Gly | Arg | Trp | Leu | Gly | Asn | Ser | Tyr | Gly | Pro | Thr | Glu | Thr | Thr | Val | Asn | |
| | | | | 775 | | | | | 780 | | | | | 785 | | |
| gcg | gcg | acg | tgg | cgc | tgc | gag | ccc | ggc | acc | tgg | gag | ggc | gcg | acc | ccg | 42118 |
| Ala | Ala | Thr | Trp | Arg | Cys | Glu | Pro | Gly | Thr | Trp | Glu | Gly | Ala | Thr | Pro | |
| | | | 790 | | | | | 795 | | | | | 800 | | | |
| atc | ggc | cgg | ccg | gtc | gcc | aac | ctg | cgg | gcg | tac | gtg | ctc | gac | ggc | cgc | 42166 |
| Ile | Gly | Arg | Pro | Val | Ala | Asn | Leu | Arg | Ala | Tyr | Val | Leu | Asp | Gly | Arg | |
| | | 805 | | | | | 810 | | | | | 815 | | | | |
| ctg | cgg | ccg | gtg | ccg | gtg | ggc | gtg | gag | ggc | gag | ctg | tac | gtc | tcg | ggc | 42214 |

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| | | | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-------|
| Leu | Arg | Pro | Val | Pro | Val | Gly | Val | Glu | Gly | Glu | Leu | Tyr | Val | Ser | Gly | |
| 820 | | | | | | 825 | | | | | 830 | | | | | |
| gcc | ggc | ctc | gcc | cgc | ggc | tat | ctg | aac | cgg | gcc | ggc | ctg | acc | gcc | ggc | 42262 |
| Ala | Gly | Leu | Ala | Arg | Gly | Tyr | Leu | Asn | Arg | Ala | Gly | Leu | Thr | Ala | Gly | |
| 835 | | | | | 840 | | | | | 845 | | | | | 850 | |
| agc | ttc | gtg | gcc | tgc | ccg | ttc | gag | ccg | ggg | gag | cgg | atg | tac | cgc | acc | 42310 |
| Ser | Phe | Val | Ala | Cys | Pro | Phe | Glu | Pro | Gly | Glu | Arg | Met | Tyr | Arg | Thr | |
| | | | | 855 | | | | | 860 | | | | | 865 | | |
| ggc | gac | atc | gtg | cgc | tgg | gac | gcg | cgg | ggc | cgc | ctc | gtc | tac | gcc | ggc | 42358 |
| Gly | Asp | Ile | Val | Arg | Trp | Asp | Ala | Arg | Gly | Arg | Leu | Val | Tyr | Ala | Gly | |
| | | | 870 | | | | | 875 | | | | | 880 | | | |
| cgc | gcc | gac | gac | cag | gcg | aag | atc | cgc | ggg | ttc | cgg | gtc | gag | ccg | ggc | 42406 |
| Arg | Ala | Asp | Asp | Gln | Ala | Lys | Ile | Arg | Gly | Phe | Arg | Val | Glu | Pro | Gly | |
| | | | 885 | | | | 890 | | | | | | 895 | | | |
| gag | gtg | gag | gcc | gtg | ctg | gcc | gcc | ggg | ccg | ggc | gtg | aac | cag | gtc | gcg | 42454 |
| Glu | Val | Glu | Ala | Val | Leu | Ala | Ala | Gly | Pro | Gly | Val | Asn | Gln | Val | Ala | |
| | 900 | | | | | 905 | | | | | 910 | | | | | |
| gtg | atc | gtg | cgt | gag | gac | gtg | ccg | ggg | gac | aag | cgc | ttg | gtg | gcg | tac | 42502 |
| Val | Ile | Val | Arg | Glu | Asp | Val | Pro | Gly | Asp | Lys | Arg | Leu | Val | Ala | Tyr | |
| 915 | | | | | 920 | | | | | 925 | | | | | 930 | |
| gtc | gtg | ggc | ggc | gac | gtg | gag | acc | ctc | cgg | tcg | tac | gcg | cag | cag | cgg | 42550 |
| Val | Val | Gly | Gly | Asp | Val | Glu | Thr | Leu | Arg | Ser | Tyr | Ala | Gln | Gln | Arg | |
| | | | | 935 | | | | | 940 | | | | | 945 | | |
| ttg | ccc | gga | tac | ctc | gtg | ccg | tcc | gcg | atc | gtc | gcg | ctg | gcc | gag | ctg | 42598 |
| Leu | Pro | Gly | Tyr | Leu | Val | Pro | Ser | Ala | Ile | Val | Ala | Leu | Ala | Glu | Leu | |
| | | | 950 | | | | | 955 | | | | | 960 | | | |
| ccg | ctg | aca | ccg | agc | gcc | aag | gtg | gac | cgg | cgg | gct | ctg | ccg | gtg | ccg | 42646 |
| Pro | Leu | Thr | Pro | Ser | Ala | Lys | Val | Asp | Arg | Arg | Ala | Leu | Pro | Val | Pro | |
| | | 965 | | | | | 970 | | | | | 975 | | | | |
| gac | tac | ggc | cgg | gac | gcc | ggg | ggg | ggg | cgg | gcg | ccg | gcc | aac | gct | cgc | 42694 |
| Asp | Tyr | Gly | Arg | Asp | Ala | Gly | Gly | Gly | Arg | Ala | Pro | Ala | Asn | Ala | Arg | |
| | 980 | | | | | 985 | | | | | 990 | | | | | |
| gag | gaa | gtg | ttg | tgc | cgg | gcg | ttc | gcc | gag | gtg | ctc | ggc | gtc | gag | | 42739 |
| Glu | Glu | Val | Leu | Cys | Arg | Ala | Phe | Ala | Glu | Val | Leu | Gly | Val | Glu | | |
| 995 | | | | | 1000 | | | | | 1005 | | | | | | |
| cgg | gtg | ggg | gtg | gag | gac | gat | ttc | ttc | gcg | ctg | ggg | ggg | cat | tcg | | 42784 |
| Arg | Val | Gly | Val | Glu | Asp | Asp | Phe | Phe | Ala | Leu | Gly | Gly | His | Ser | | |
| 1010 | | | | | 1015 | | | | | 1020 | | | | | | |
| ctg | ctg | gtg | gtc | tcg | ctg | gtg | gag | cgg | ctg | cgc | cgg | cag | ggg | atc | | 42829 |
| Leu | Leu | Val | Val | Ser | Leu | Val | Glu | Arg | Leu | Arg | Arg | Gln | Gly | Ile | | |
| 1025 | | | | | 1030 | | | | | 1035 | | | | | | |
| tcg | gtg | ccg | gtg | cgg | gcg | ttg | ttc | acc | acg | ccg | acc | ccg | gcc | ggg | | 42874 |
| Ser | Val | Pro | Val | Arg | Ala | Leu | Phe | Thr | Thr | Pro | Thr | Pro | Ala | Gly | | |
| 1040 | | | | | 1045 | | | | | 1050 | | | | | | |
| ctg | gcc | gag | gcg | gtc | ggg | gat | ggg | gcc | gtg | gtg | gtg | ccg | ccg | aac | | 42919 |
| Leu | Ala | Glu | Ala | Val | Gly | Asp | Gly | Ala | Val | Val | Val | Pro | Pro | Asn | | |
| 1055 | | | | | 1060 | | | | | 1065 | | | | | | |
| ctg | att | ccc | gag | ggg | gcg | gcg | gag | ctg | acc | ccg | gag | atg | ctg | ccg | | 42964 |

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| | | | | | | | | | | | | | | | |
|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Leu 1070 | Ile | Pro | Glu | Gly | Ala 1075 | Ala | Glu | Leu | Thr | Pro 1080 | Glu | Met | Leu | Pro | |
| ctg Leu 1085 | gcc Ala | gat Asp | ctg Leu | acc Thr | gcc Ala 1090 | gac Asp | gaa Glu | ctt Leu | gct Ala | gtt Val 1095 | gtc Val | gtg Val | gat Asp | tcg Ser | 43009 |
| gtg Val 1100 | cct Pro | ggt Gly | ggt Gly | gcg Ala | gcg Ala 1105 | aac Asn | atc Ile | gcg Ala | gat Asp | gtg Val 1110 | tat Tyr | ccg Pro | ttg Leu | gcg Ala | 43054 |
| ccg Pro 1115 | ttg Leu | cag Gln | gag Glu | ggc Gly | att Ile 1120 | ttc Phe | ttc Phe | cat His | cac His | atg Met 1125 | atg Met | gcc Ala | gac Asp | cgg Arg | 43099 |
| gat Asp 1130 | tcg Ser | gcg Ala | gac Asp | gtg Val | tat Tyr 1135 | gtg Val | acg Thr | ccg Pro | acg Thr | gtg Val 1140 | gtg Val | gag Glu | ttc Phe | gac Asp | 43144 |
| tcc Ser 1145 | cgg Arg | gac Asp | cgg Arg | ttg Leu | gac Asp 1150 | ggc Gly | ttc Phe | ctg Leu | gcc Ala | gcc Ala 1155 | ttg Leu | cag Gln | cag Gln | gtc Val | 43189 |
| gtc Val 1160 | gac Asp | cgt Arg | acg Thr | gat Asp | gtg Val 1165 | tat Tyr | cgg Arg | acg Thr | agt Ser | gtg Val 1170 | gtg Val | tgg Trp | cag Gln | ggg Gly | 43234 |
| ctg Leu 1175 | cgc Arg | gag Glu | ccg Pro | gtg Val | cag Gln 1180 | gtg Val | gtg Val | tgg Trp | cgg Arg | cac His 1185 | gcg Ala | cgc Arg | ctg Leu | ccc Pro | 43279 |
| gtc Val 1190 | gac Asp | gag Glu | gtg Val | gtg Val | ctg Leu 1195 | cgg Arg | gac Asp | gac Asp | ctc Leu | gac Asp 1200 | ccg Pro | gtc Val | gag Glu | cag Gln | 43324 |
| ctg Leu 1205 | aac Asn | gcg Ala | ctc Leu | ggc Gly | acg Thr 1210 | gcc Ala | tgg Trp | atg Met | gac Asp | ctg Leu 1215 | tcc Ser | gag Glu | gcg Ala | ccg Pro | 43369 |
| ctg Leu 1220 | gtg Val | cag Gln | gcc Ala | gtc Val | gtc Val 1225 | gcc Ala | gcc Ala | cgc Arg | ccc Pro | ggc Gly 1230 | gat Asp | ccg Pro | cag Gln | cgc Arg | 43414 |
| tgg Trp 1235 | ctc Leu | gcc Ala | gtg Val | ctg Leu | cgc Arg 1240 | atc Ile | cac His | cac His | ctc Leu | gtg Val 1245 | cag Gln | gac Asp | cac His | acc Thr | 43459 |
| gcc Ala 1250 | ctc Leu | gac Asp | atc Ile | ctc Leu | ctc Leu 1255 | gag Glu | gag Glu | ctg Leu | gcg Ala | gcg Ala 1260 | tac Tyr | ctg Leu | gcc Ala | ggc Gly | 43504 |
| cgc Arg 1265 | ggc Gly | ggc Gly | gac Asp | ctg Leu | ccc Pro 1270 | gag Glu | ccg Pro | gtg Val | ccg Pro | ttc Phe 1275 | cgc Arg | gag Glu | ttc Phe | gtc Val | 43549 |
| gcg Ala 1280 | cac His | acc Thr | cgc Arg | ctc Leu | ggc Gly 1285 | gtg Val | ccc Pro | cgc Arg | gag Glu | gag Glu 1290 | cac His | gag Glu | cgc Arg | tac Tyr | 43594 |
| ttc Phe 1295 | gcc Ala | ggg Gly | ttg Leu | ctc Leu | ggc Gly 1300 | gac Asp | gtc Val | acc Thr | gag Glu | acc Thr 1305 | acc Thr | gcg Ala | ccg Pro | tac Tyr | 43639 |
| ggg | ctc | ctc | gac | gtg | cac | agc | ggc | ggt | ctc | gcc | tcg | gcg | cag | gcc | 43684 |

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|--------------------|-----|-----|-----|-----|--------------------|-----|-----|-----|-----|--------------------|-----|-----|-----|-----|-------|
| Gly 1310 | Leu | Leu | Asp | Val | His 1315 | Ser | Gly | Gly | Leu | Ala 1320 | Ser | Ala | Gln | Ala | |
| cac His 1325 | ctg | cgg | ctg | gac | ggc Gly 1330 | ccg | ctc | ggc | cgg | cgc Arg 1335 | gtg | gcc | gcc | ttc | 43729 |
| gac Ala 1340 | ctg | cgg | gaa | cac | ggc Val 1345 | agc | ccg | gcg | acg | ctc Leu 1350 | ttc | cac | ctc | gcg | 43774 |
| tgg Trp 1355 | gcg | cgg | gtg | ctc | ggc Gly 1360 | acg | ctg | gcc | ggg | cgt Arg 1365 | gac | gac | gtc | gtc | 43819 |
| ttc Phe 1370 | ggc | acg | gtc | ctg | ttc Phe 1375 | ggg | cgg | atg | aac | tgc Ser 1380 | ggc | gcc | ggc | gcc | 43864 |
| gac Asp 1385 | cgc | gtt | ccc | ggc | ctg Leu 1390 | ttc | atc | aac | acg | ctg Leu 1395 | ccg | gtg | cgg | gtg | 43909 |
| cgg Arg 1400 | ctc | ggc | gcg | ccc | gtc Val 1405 | ggc | gac | gcc | ctc | gac Asp 1410 | ggc | ctg | cgt | gac | 43954 |
| cag Gln 1415 | ctc | atc | gag | ctc | atc Ile 1420 | gcc | cac | gag | cac | gcg Ala 1425 | ccg | ctg | gcc | gtg | 43999 |
| gcc Ala 1430 | cag | cag | gcc | gcg | aac Asn 1435 | ctc | ttc | ggc | cgg | ccg Pro 1440 | ctc | ttc | acc | tcc | 44044 |
| atc Ile 1445 | ttc | aac | tat | cgg | tac Tyr 1450 | gcc | cgg | ggg | gcc | gag Glu 1455 | ccg | gcc | ggc | gcc | 44089 |
| gcg Ala 1460 | ctc | gac | ggc | atc | cgc Arg 1465 | ctg | ctc | tcc | gcc | cgc Arg 1470 | gac | ctc | acc | aac | 44134 |
| tat Tyr 1475 | ccg | ctg | gcg | gtg | gcc Ala 1480 | gtc | gac | gcg | gag | ggc Gly 1485 | gac | acg | ttc | tgc | 44179 |
| ctc Leu 1490 | acc | gtc | gac | gcg | gtg Val 1495 | gcg | ccg | gcc | gac | ccc Pro 1500 | gtg | cag | gtc | ggc | 44224 |
| gag Glu 1505 | ctg | ctc | gtc | acc | gcg Ala 1510 | ctg | cgc | aac | ctg | acc Thr 1515 | cgg | acc | gcc | gag | 44269 |
| aac Asn 1520 | gcg | ccc | gga | acg | ccg Pro 1525 | ctg | gcc | gcg | gtc | ggc Gly 1530 | gtg | ctg | ggc | gag | 44314 |
| gac Asp 1535 | gag | ctg | agc | cgg | gtc Val 1540 | gtc | tcc | ggc | tgg | aac Asn 1545 | gac | acc | gcc | cgc | 44359 |
| cgg | gtc | cgg | cag | gcg | tgc | gtg | ccc | gag | ctc | ttc | gcg | gag | cgg | gtg | 44404 |

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|-------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Arg 1550 | Val | Arg | Gln | Ala | Ser 1555 | Val | Pro | Glu | Leu | Phe 1560 | Ala | Glu | Arg | Val | |
| gcg 1565 | gcc Ala | gcg Ala | ccc Pro | ggc Gly | gcg Ala 1570 | ccg Pro | gcc Ala | gtc Val | gcc Ala | gcc Ala 1575 | ggg Gly | gac Asp | ctg Leu | cgc Arg | 44449 |
| tgg 1580 | acg Trp | tac Thr | gcg Tyr | gac Ala | ctc Leu 1585 | gac Asp | gcc Ala | cgt Arg | tcc Ser | gac Asp 1590 | gcg Ala | ctc Leu | gcg Ala | cgg Arg | 44494 |
| agc 1595 | ctg Ser | gtg Leu | gcg Val | ggc Ala | ggg Gly 1600 | gtg Val | acc Thr | gag Ala | tcg Glu | ccg Ser 1605 | gtc Pro | gtc Val | gtc Val | gtc Val | 44539 |
| gcc 1610 | ctc Ala | gag Leu | cgc Glu | tcc Arg | gcg Ser 1615 | gac Asp | gtg Val | ctg Leu | acc Thr | gcg Ala 1620 | ttc Phe | ctc Leu | gcc Ala | gtc Val | 44584 |
| gcg 1625 | aag Ala | gcc Lys | ggc Ala | ggt Gly | gtc Val 1630 | ttc Phe | gtc Val | ccg Pro | gtg Val | gac Asp 1635 | ctc Leu | tcc Ser | tgg Trp | ccc Pro | 44629 |
| cgg 1640 | gcc Arg | cgc Ala | gtc Arg | gac Val | gcg Ala 1645 | gtg Val | atc Ile | gcc Ala | gac Asp | tgc Cys 1650 | gcc Ala | gcc Ala | tgg Trp | atc Ile | 44674 |
| gcg 1655 | gtg Ala | gcc Val | gac Ala | cgg Asp | ccg Pro 1660 | atg Met | acc Thr | ggc Gly | ctg Leu | acc Thr 1665 | gtc Val | gtg Val | ccc Pro | gcc Ala | 44719 |
| aac 1670 | cgg Asn | gcc Arg | ggc Ala | gat Gly | ccc Pro 1675 | gcg Ala | gtc Val | gcg Ala | ctg Leu | ccg Pro 1680 | ccc Pro | cgc Arg | ccc Pro | ctg Leu | 44764 |
| ccg 1685 | ggc Pro | gcg Gly | gcg Ala | ggc Ala | tac Tyr 1690 | cgg Arg | atg Met | tac Tyr | acc Thr | tcc Ser 1695 | ggc Gly | tcc Ser | acc Thr | ggc Gly | 44809 |
| cgg 1700 | ccc Arg | aag Pro | ggc Lys | gtg Gly | gtg Val 1705 | acc Thr | acc Thr | cat His | cag Gln | aac Asn 1710 | gtc Val | gtc Val | gac Asp | ctg Leu | 44854 |
| gtc 1715 | acc Val | gac Thr | cgg Asp | tgc Arg | tgg Cys 1720 | ggc Gly | ccg Pro | acc Thr | ccg Pro | cgg Arg 1725 | gtc Val | ctg Leu | ttc Phe | cac His | 44899 |
| gcc 1730 | ccg Ala | cac Pro | ggc His | ttc Ala | gac Phe 1735 | gcc Ala | tcc Ser | tcg Ser | ttc Phe | gag Glu 1740 | ctc Leu | tgg Trp | gtg Val | ccg Pro | 44944 |
| ctg 1745 | ctg Leu | acc Leu | ggc Thr | ggc Gly | acc Thr 1750 | gtc Val | gtg Val | gtc Val | gca Ala | ccg Pro 1755 | ggg Gly | gag Glu | agc Ser | atc Ile | 44989 |
| gac 1760 | acc Asp | ggt Thr | gtg Gly | ctg Val | cgg Leu 1765 | cag Gln | ctg Leu | atc Ile | cgg Arg | gcc Ala 1770 | cac His | gag Glu | ctg Leu | acc Thr | 45034 |
| cac 1775 | gtg His | cac Val | gtc His | acc Val | gcg Ala 1780 | ggc Gly | ctg Leu | ttg Leu | cgc Arg | gtg Val 1785 | ctg Leu | gcc Ala | gag Glu | gac Asp | 45079 |
| ccg | tcg | tgc | ttc | gcc | ggg | ctc | acc | gag | gtg | ctc | acc | ggc | ggc | gac | 45124 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Pro 1790 | Ser | Cys | Phe | Ala | Gly 1795 | Leu | Thr | Glu | Val | Leu 1800 | Thr | Gly | Gly | Asp | |
| gtg Val 1805 | gtc Val | ccg Pro | gcc Ala | gag Glu | gcg Ala 1810 | gtg Val | cgc Arg | cgc Arg | gtg Val | ctg Leu 1815 | gac Asp | gcc Ala | aat Asn | ccc Pro | 45169 |
| ggc Gly 1820 | gtg Val | cgg Arg | gtg Val | cgg Arg | cag Gln 1825 | ctg Leu | tac Tyr | ggc Gly | ccg Pro | acc Thr 1830 | gag Glu | gtg Val | acg Thr | ctc Leu | 45214 |
| tgc Cys 1835 | gcc Ala | acc Thr | cag Gln | cac His | gtg Val 1840 | gtg Val | cgc Arg | gag Glu | ccc Pro | agc Ser 1845 | ccg Pro | gtg Val | ctg Leu | ccc Pro | 45259 |
| atc Ile 1850 | ggg Gly | cgg Arg | ccg Pro | ctc Leu | gac Asp 1855 | aac Asn | acc Thr | cgc Arg | gtc Val | tac Tyr 1860 | gtg Val | ctc Leu | gac Asp | ggg Gly | 45304 |
| ctt Leu 1865 | ctc Leu | cag Gln | ccg Pro | gtc Val | ccg Pro 1870 | gtc Val | ggg Gly | gtc Val | acc Thr | ggc Gly 1875 | gag Glu | ctg Leu | tac Tyr | atc Ile | 45349 |
| gcc Ala 1880 | ggc Gly | gcc Ala | ggc Gly | gtg Val | gcc Ala 1885 | cgg Arg | ggc Gly | tac Tyr | gcc Ala | gac Asp 1890 | atg Met | ccg Pro | ggc Gly | acc Thr | 45394 |
| acc Thr 1895 | gcc Ala | gag Glu | cgg Arg | ttc Phe | gtc Val 1900 | gcc Ala | gac Asp | ccg Pro | ttc Phe | acc Thr 1905 | gcc Ala | ggc Gly | ggc Gly | cgc Arg | 45439 |
| ctc Leu 1910 | tac Tyr | cgc Arg | acc Thr | ggg Gly | gac Asp 1915 | ctg Leu | gtc Val | cgc Arg | tgg Trp | acc Thr 1920 | ggc Gly | gag Glu | ggc Gly | gag Glu | 45484 |
| ctg Leu 1925 | gtg Val | ttc Phe | gcc Ala | ggc Gly | cgg Arg 1930 | gcc Ala | gac Asp | gac Asp | cag Gln | gtg Val 1935 | aag Lys | atc Ile | cgc Arg | ggc Gly | 45529 |
| tac Tyr 1940 | cgc Arg | gtc Val | gag Glu | ccg Pro | ggc Gly 1945 | gag Glu | gtg Val | gag Glu | gcg Ala | gtc Val 1950 | ctc Leu | gcc Ala | gcg Ala | ttg Leu | 45574 |
| ccg Pro 1955 | ggc Gly | gtc Val | agc Ser | cag Gln | gcg Ala 1960 | gcg Ala | gtc Val | atc Ile | gtc Val | cgc Arg 1965 | gag Glu | gac Asp | gta Val | ccc Pro | 45619 |
| ggc Gly 1970 | gac Asp | aag Lys | cgg Arg | ctg Leu | gtg Val 1975 | gcc Ala | tac Tyr | ctg Leu | gtc Val | gcg Ala 1980 | gcg Ala | ccg Pro | gag Glu | acg Thr | 45664 |
| gtc Val 1985 | gag Glu | gcc Ala | gcc Ala | cgc Arg | gcc Ala 1990 | cac His | gcc Ala | gag Glu | cag Gln | cgg Arg 1995 | ctt Leu | ccg Pro | tcc Ser | tat Tyr | 45709 |
| ctc Leu 2000 | gtc Val | ccg Pro | tcc Ser | gcg Ala | ttc Phe 2005 | gtg Val | cag Gln | ctg Leu | gac Asp | gcg Ala 2010 | ctg Leu | ccg Pro | ctg Leu | acc Thr | 45754 |
| ggc Gly 2015 | aac Asn | cag Gln | aag Lys | gtc Val | gac Asp 2020 | cgg Arg | gcg Ala | gcg Ala | ctg Leu | ccg Pro 2025 | gca Ala | ccg Pro | ctg Leu | ggg Gly | 45799 |
| ttc | gaa | gcc | ggg | gcc | ggc | cgg | gcg | ccg | gcg | gac | gcc | cgc | gag | gag | 45844 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Phe 2030 | Glu | Ala | Gly | Ala | Gly 2035 | Arg | Ala | Pro | Ala | Asp 2040 | Ala | Arg | Glu | Glu | |
| ctg Leu 2045 | gtc Val | ggc Gly | gcc Ala | gcc Ala | ttc Phe 2050 | gcc Ala | gag Glu | gtg Val | ctc Leu | gac Asp 2055 | ctc Leu | ggc Gly | cgg Arg | gtg Val | 45889 |
| ggc Gly 2060 | ccc Pro | gac Asp | gac Asp | gac Asp | ttc Phe 2065 | ttc Phe | gcg Ala | ctc Leu | ggc Gly | ggg Gly 2070 | cac His | tcg Ser | ctg Leu | ctc Leu | 45934 |
| gcc Ala 2075 | ctc Leu | gcg Ala | ctg Leu | gtg Val | gag Glu 2080 | cgc Arg | ctg Leu | cgc Arg | cgg Arg | cag Gln 2085 | ggc Gly | ctg Leu | ggc Gly | gtc Val | 45979 |
| tcg Ser 2090 | gtg Val | cgt Arg | gcc Ala | gtc Val | ttc Phe 2095 | gac Asp | gca Ala | cgc Arg | acc Thr | ccc Pro 2100 | gcg Ala | gcg Ala | ctg Leu | acc Thr | 46024 |
| cgc Arg 2105 | cgc Arg | ggc Gly | gac Asp | ggc Gly | ggt Gly 2110 | gcc Ala | gac Asp | gac Asp | cgg Arg | ccg Pro 2115 | gcg Ala | ctg Leu | cgg Arg | gcc Ala | 46069 |
| ggt Gly 2120 | gcg Ala | cgg Arg | ccc Pro | gcg Ala | cgg Arg 2125 | ctg Leu | ccg Pro | ctt Leu | tcc Ser | tac Tyr 2130 | gcg Ala | cag Gln | cgc Arg | cgg Arg | 46114 |
| ctg Leu 2135 | tgg Trp | ttc Phe | ctg Leu | gcc Ala | cag Gln 2140 | ctg Leu | gaa Glu | gga Gly | ccg Pro | agc Ser 2145 | gcc Ala | acc Thr | tac Tyr | aac Asn | 46159 |
| atc Ile 2150 | ccg Pro | gtc Val | gcg Ala | ctg Leu | cgc Arg 2155 | ctg Leu | gag Glu | ggc Gly | gac Asp | ctc Leu 2160 | gac Asp | cgg Arg | gat Asp | gcc Ala | 46204 |
| ctg Leu 2165 | acc Thr | gcc Ala | gcc Ala | ctg Leu | cgc Arg 2170 | gac Asp | gtg Val | gtg Val | gcc Ala | cgg Arg 2175 | cac His | gag Glu | gtg Val | ctg Leu | 46249 |
| cgc Arg 2180 | acg Thr | gtg Val | ttc Phe | acg Thr | gtc Val 2185 | gcc Ala | gac Asp | ggc Gly | gag Glu | ccg Pro 2190 | tgg Trp | caa Gln | cac His | atc Ile | 46294 |
| ctc Leu 2195 | gac Asp | ccc Pro | gcg Ala | cgg Arg | gcc Ala 2200 | gag Glu | ccc Pro | gcg Ala | ttg Leu | ccg Pro 2205 | gtc Val | gtg Val | gac Asp | gtg Val | 46339 |
| ccg Pro 2210 | gcc Ala | ggc Gly | cgg Arg | gtc Val | gag Glu 2215 | gag Glu | gcg Ala | gtc Val | gcc Ala | gaa Glu 2220 | gcg Ala | gcc Ala | gcg Ala | tac Tyr | 46384 |
| gcc Ala 2225 | ttc Phe | gac Asp | ctg Leu | gcc Ala | cgg Arg 2230 | gag Glu | atc Ile | ccg Pro | ctg Leu | cgt Arg 2235 | gcc Ala | gtg Val | ctg Leu | ctc Leu | 46429 |
| gcc Ala 2240 | ccc Pro | ggc Gly | gac Asp | ggc Gly | acc Thr 2245 | cac His | gtg Val | ctc Leu | gtg Val | ctg Leu 2250 | gtg Val | ctg Leu | cac His | cac His | 46474 |
| atc Ile 2255 | gcg Ala | gcc Ala | gac Asp | ggc Gly | tgg Trp 2260 | tcg Ser | atg Met | cgg Arg | ccg Pro | ctg Leu 2265 | gcc Ala | cgc Arg | gac Asp | ctg Leu | 46519 |
| gcg | acc | gcc | tac | gcc | gcg | cgg | cgg | cgg | ggg | cag | gcg | ccc | gag | tcg | 46564 |

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|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------|
| Ala 2270 | Thr | Ala | Tyr | Ala | Ala 2275 | Arg | Arg | Arg | Gly | Gln 2280 | Ala | Pro | Glu | Ser | |
| gag 2285 | acc | ctg | ccc | gtc | cag 2290 | tac | gcc | gac | tac | gcc 2295 | ctc | tgg | cag | cgt | 46609 |
| Glu 2285 | Thr | Leu | Pro | Val | Gln 2290 | Tyr | Ala | Asp | Tyr | Ala 2295 | Leu | Trp | Gln | Arg | |
| gac 2300 | ctg | ctg | ggc | tcc | gac 2305 | agc | gac | ccg | gcg | agc 2310 | ctg | atc | tcc | cgg | 46654 |
| Asp 2300 | Leu | Leu | Gly | Ser | Asp 2305 | Ser | Asp | Pro | Ala | Ser 2310 | Leu | Ile | Ser | Arg | |
| cag 2315 | atc | gcc | cac | tgg | cgc 2320 | gag | cgg | ctc | gac | ggc 2325 | gtg | ccg | gag | gag | 46699 |
| Gln 2315 | Ile | Ala | His | Trp | Arg 2320 | Glu | Arg | Leu | Asp | Gly 2325 | Val | Pro | Glu | Glu | |
| ctg 2330 | gac | ctg | ccc | gcc | gac 2335 | cgg | ccg | cgg | ccc | gcc 2340 | gcg | gcc | tcg | cac | 46744 |
| Leu 2330 | Asp | Leu | Pro | Ala | Asp 2335 | Arg | Pro | Arg | Pro | Ala 2340 | Ala | Ala | Ser | His | |
| cgc 2345 | ggc | cac | ctg | cac | agc 2350 | gcg | gag | atc | ccg | gcc 2355 | gac | gtg | cac | cgg | 46789 |
| Arg 2345 | Gly | His | Leu | His | Ser 2350 | Ala | Glu | Ile | Pro | Ala 2355 | Asp | Val | His | Arg | |
| agc 2360 | ctg | cgc | cgg | gtc | gcc 2365 | gcc | gac | cac | ggc | gcg 2370 | acc | gtc | ttc | atg | 46834 |
| Ser 2360 | Leu | Arg | Arg | Val | Ala 2365 | Ala | Asp | His | Gly | Ala 2370 | Thr | Val | Phe | Met | |
| acc 2375 | ctg | cag | gcc | gcc | gtg 2380 | gcg | gtc | ctg | ctg | tcg 2385 | cgg | ctc | ggc | gcg | 46879 |
| Thr 2375 | Leu | Gln | Ala | Ala | Val 2380 | Ala | Val | Leu | Leu | Ser 2385 | Arg | Leu | Gly | Ala | |
| ggc 2390 | acc | gac | gtc | ccg | atc 2395 | ggc | acc | gtc | gtc | gcc 2400 | ggc | cgc | gcc | gac | 46924 |
| Gly 2390 | Thr | Asp | Val | Pro | Ile 2395 | Gly | Thr | Val | Val | Ala 2400 | Gly | Arg | Ala | Asp | |
| cgg 2405 | gcg | ctg | gag | aac | ctg 2410 | gtc | ggc | ttc | ttc | gtc 2415 | aac | acg | ctc | gtg | 46969 |
| Arg 2405 | Ala | Leu | Glu | Asn | Leu 2410 | Val | Gly | Phe | Phe | Val 2415 | Asn | Thr | Leu | Val | |
| ctg 2420 | cgc | acc | gac | ctg | acc 2425 | ggc | gac | ccg | cgg | ctg 2430 | acc | gac | gtg | ctc | 47014 |
| Leu 2420 | Arg | Thr | Asp | Leu | Thr 2425 | Gly | Asp | Pro | Arg | Leu 2430 | Thr | Asp | Val | Leu | |
| ggc 2435 | cag | gtg | cgc | gag | ctg 2440 | acc | ctg | cgg | gcg | ctg 2445 | gcc | cac | cag | gac | 47059 |
| Gly 2435 | Gln | Val | Arg | Glu | Leu 2440 | Thr | Leu | Arg | Ala | Leu 2445 | Ala | His | Gln | Asp | |
| gtc 2450 | ccg | ttc | gag | aag | ctg 2455 | gtc | gag | gag | ctc | acc 2460 | ccg | gcc | cgc | tcg | 47104 |
| Val 2450 | Pro | Phe | Glu | Lys | Leu 2455 | Val | Glu | Glu | Leu | Thr 2460 | Pro | Ala | Arg | Ser | |
| ctc 2465 | gcc | cgg | cac | ccc | ctg 2470 | ttc | cag | gtc | atg | gtc 2475 | acc | ctg | gac | ggc | 47149 |
| Leu 2465 | Ala | Arg | His | Pro | Leu 2470 | Phe | Gln | Val | Met | Val 2475 | Thr | Leu | Asp | Gly | |
| ggc 2480 | ggg | ccg | gac | ggc | gcc 2485 | gag | ctg | ccg | ggc | ctg 2490 | gcg | atg | tcg | gtc | 47194 |
| Gly 2480 | Gly | Pro | Asp | Gly | Ala 2485 | Glu | Leu | Pro | Gly | Leu 2490 | Ala | Met | Ser | Val | |
| gtg 2495 | ccg | acc | ggc | gcc | gtt 2500 | ccg | gcc | aag | ttc | gac 2505 | ctc | gac | ctc | acg | 47239 |
| Val 2495 | Pro | Thr | Gly | Ala | Val 2500 | Pro | Ala | Lys | Phe | Asp 2505 | Leu | Asp | Leu | Thr | |
| ttc | acc | gag | acc | ttc | gac | gcc | gcg | ggg | gag | ccg | gcc | ggc | ctg | cgc | 47284 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Phe 2510 | Thr | Glu | Thr | Phe | Asp 2515 | Ala | Ala | Gly | Glu | Pro 2520 | Ala | Gly | Leu | Arg | |
| gtc Val 2525 | gac Asp | ctc Leu | atc Ile | gcg Ala | gcg Ala 2530 | gcc Ala | gac Asp | ctc Leu | ttc Phe | gac Asp 2535 | gcg Ala | ggc Gly | acg Thr | gcc Ala | 47329 |
| gcc Ala 2540 | cgg Arg | ctc Leu | gcc Ala | ggc Gly | tac Tyr 2545 | ctg Leu | agc Ser | cgc Arg | gtt Val | ctc Leu 2550 | ggc Gly | gtg Val | ctc Leu | gcg Ala | 47374 |
| gcc Ala 2555 | gat Asp | ccg Pro | cgg Arg | cgc Arg | cgc Arg 2560 | ctg Leu | gcc Ala | gag Glu | gtc Val | gac Asp 2565 | ccg Pro | ctg Leu | gag Glu | gcg Ala | 47419 |
| gag Glu 2570 | gag Glu | agc Ser | cgg Arg | ctc Leu | atg Met 2575 | ctc Leu | gcc Ala | gcc Ala | ggg Gly | gag Glu 2580 | gag Glu | ccc Pro | gcg Ala | ccg Pro | 47464 |
| gcc Ala 2585 | ctg Leu | ccc Pro | gag Glu | atc Ile | acc Thr 2590 | gtc Val | gcg Ala | gcg Ala | ctc Leu | gtc Val 2595 | gcc Ala | gag Glu | cag Gln | tgc Cys | 47509 |
| gcc Ala 2600 | cgc Arg | acg Thr | ccg Pro | ggg Gly | gcg Ala 2605 | gtc Val | gcg Ala | gtg Val | acc Thr | gga Gly 2610 | ccg Pro | gac Asp | gcg Ala | agc Ser | 47554 |
| ctg Leu 2615 | acc Thr | tac Tyr | gcc Ala | gag Glu | ctc Leu 2620 | gac Asp | gag Glu | cgg Arg | gcg Ala | gcc Ala 2625 | cgg Arg | atc Ile | gcc Ala | cgc Arg | 47599 |
| tgg Trp 2630 | ctg Leu | cgc Arg | cgc Arg | cac His | ggg Gly 2635 | gcc Ala | ggg Gly | ccc Pro | ggc Gly | gcg Ala 2640 | gcc Ala | gtg Val | tgc Cys | gtc Val | 47644 |
| ctg Leu 2645 | atg Met | gaa Glu | cgg Arg | tcg Ser | gcg Ala 2650 | gag Glu | ctg Leu | gtc Val | gcc Ala | gtg Val 2655 | ctg Leu | ctc Leu | ggc Gly | gtg Val | 47689 |
| atg Met 2660 | cgc Arg | gcg Ala | ggg Gly | gcg Ala | gcg Ala 2665 | tac Tyr | gtg Val | ccg Pro | gtc Val | gac Asp 2670 | ccc Pro | gcc Ala | tat Tyr | ccg Pro | 47734 |
| gcc Ala 2675 | gag Glu | cgg Arg | atc Ile | cgg Arg | ttc Phe 2680 | gtc Val | gtc Val | acc Thr | gac Asp | gcc Ala 2685 | cgg Arg | gcc Ala | gcc Ala | tgc Cys | 47779 |
| gtg Val 2690 | gtg Val | agc Ser | gag Glu | tcg Ser | gcc Ala 2695 | tcg Ser | gcc Ala | ggc Gly | ctc Leu | gtc Val 2700 | ccg Pro | gac Asp | ggg Gly | gtg Val | 47824 |
| ccg Pro 2705 | tgc Cys | ctg Leu | gcg Ala | atc Ile | gac Asp 2710 | gac Asp | ccg Pro | gcc Ala | gcc Ala | gcc Ala 2715 | gcg Ala | gaa Glu | ccg Pro | gcc Ala | 47869 |
| gag Glu 2720 | ccc Pro | ggc Gly | gac Asp | gac Asp | ccg Pro 2725 | ggc Gly | gac Asp | gcg Ala | gcc Ala | ggg Gly 2730 | ccg Pro | cgg Arg | ccg Pro | gac Asp | 47914 |
| gat Asp 2735 | ccg Pro | gcg Ala | tac Tyr | atc Ile | atc Ile 2740 | tac Tyr | acc Thr | tcc Ser | gga Gly | tcg Ser 2745 | acc Thr | ggc Gly | acc Thr | ccc Pro | 47959 |
| aag | ggc | gtc | gtg | gtc | tcg | cac | cgc | aac | gtc | gtg | gcg | ctg | ctg | acc | 48004 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Lys 2750 | Gly | Val | Val | Val | Ser 2755 | His | Arg | Asn | Val | Val 2760 | Ala | Leu | Leu | Thr | |
| gcc Ala 2765 | acc Thr | cgg Arg | cgc Pro | ctg Leu | ttc Phe 2770 | ggc Gly | ttc Phe | gcc Ala | ggc Gly | gac Asp 2775 | gag Glu | gtg Val | tgg Trp | tcg Ser | 48049 |
| tgg Trp 2780 | ttc Phe | cac His | tcg Ser | gtc Val | gcg Ala 2785 | ttc Phe | gac Asp | ttc Phe | tcg Ser | gtg Val 2790 | tgg Trp | gag Glu | ctg Leu | tgg Trp | 48094 |
| ggc Gly 2795 | gcg Ala | ctc Leu | acc Thr | cac His | ggc Gly 2800 | ggc Gly | cgg Arg | gtc Val | gtc Val | gtc Val 2805 | gtg Val | ccc Pro | tac Tyr | gcg Ala | 48139 |
| gtg Val 2810 | tcc Ser | cgc Arg | tcg Ser | ccg Pro | cgc Ser 2815 | gac Asp | ttc Phe | tgg Trp | gag Glu | ctc Leu 2820 | gtc Val | gtc Val | cgc Arg | gag Glu | 48184 |
| ggc Gly 2825 | gtc Val | acc Thr | gtg Val | ctg Leu | agc Ser 2830 | cag Gln | aca Thr | ccg Pro | tcg Ser | gcc Ala 2835 | ttc Phe | gcg Ala | cag Gln | ctc Leu | 48229 |
| atg Met 2840 | gcc Ala | gcg Ala | gcg Ala | ggg Gly | gac Asp 2845 | gac Asp | gac Asp | cgg Arg | gac Asp | gcg Ala 2850 | ctg Leu | cgg Arg | ttc Phe | gtc Val | 48274 |
| gtc Val 2855 | ttc Phe | ggc Gly | ggc Gly | gag Glu | gcc Ala 2860 | ctc Leu | gac Asp | ccg Pro | ggc Gly | cgg Arg 2865 | ctg Leu | gcc Ala | ggc Gly | tgg Trp | 48319 |
| ctg Leu 2870 | gcc Ala | cgc Arg | cgc Arg | ccg Pro | gac Asp 2875 | aag Lys | ccg Pro | cgc Arg | ctg Leu | gtc Val 2880 | aac Asn | atg Met | tac Tyr | ggc Gly | 48364 |
| atc Ile 2885 | acc Thr | gag Glu | acg Thr | acc Thr | gtg Val 2890 | cac His | acc Thr | acg Thr | tac Tyr | cag Gln 2895 | cac His | atc Ile | gcg Ala | ccc Pro | 48409 |
| ggc Gly 2900 | acg Thr | acg Thr | ggc Gly | agc Ser | gtc Val 2905 | atc Ile | ggc Gly | cgc Arg | gga Gly | ctg Leu 2910 | ccc Pro | ggc Gly | ttc Phe | ggc Gly | 48454 |
| ctc Leu 2915 | tac Tyr | gtg Val | ctg Leu | gac Asp | gag Glu 2920 | gcg Ala | ctg Leu | cgc Arg | ccg Pro | gtg Val 2925 | ccg Pro | gcc Ala | ggc Gly | gtg Val | 48499 |
| ccc Pro 2930 | ggc Gly | gag Glu | gtg Val | tac Tyr | gcc Ala 2935 | cgc Arg | ggc Gly | ccg Pro | cag Gln | gtg Val 2940 | gcc Ala | cgc Arg | ggc Gly | tac Tyr | 48544 |
| atc Ile 2945 | ggc Gly | cgc Arg | ccc Pro | ggc Gly | ctg Leu 2950 | acc Thr | gcg Ala | gag Glu | cgg Arg | ttc Phe 2955 | gtc Val | gcc Ala | tcg Ser | ccc Pro | 48589 |
| ttc Phe 2960 | gcg Ala | ccc Pro | ggc Gly | gag Glu | cgg Arg 2965 | atg Met | tac Tyr | cgc Arg | acc Thr | ggc Gly 2970 | gac Asp | gtg Val | gcc Ala | cgc Arg | 48634 |
| tgg Trp 2975 | acc Thr | gcc Ala | gac Asp | ggc Gly | cgc Arg 2980 | ctg Leu | gtg Val | ttc Phe | gcc Ala | ggt Gly 2985 | cgc Arg | tcg Ser | gac Asp | gac Asp | 48679 |
| cag | atc | aag | atc | cgc | ggt | ttc | cgg | atc | gag | ccc | ggc | gag | gtg | gag | 48724 |

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| | | | | | | | | | | | | | | | |
|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Gln 2990 | Ile | Lys | Ile | Arg | Gly 2995 | Phe | Arg | Ile | Glu | Pro 3000 | Gly | Glu | Val | Glu | |
| gcc Ala 3005 | gtg Val | ctg Leu | gcc Ala | gcc Ala | ggg Gly 3010 | ccg Pro | ggc Gly | gtg Val | agc Ser | cag Gln 3015 | gcc Ala | gcg Ala | gtg Val | atc Ile | 48769 |
| gtg Val 3020 | cgt Arg | gag Glu | gac Asp | gtg Val | ccg Pro 3025 | ggg Gly | gac Asp | aag Lys | cgc Arg | ttg Leu 3030 | gtg Val | gcg Ala | tac Tyr | gtc Val | 48814 |
| gtg Val 3035 | ggc Gly | ggc Gly | gac Asp | gcg Ala | gag Glu 3040 | acc Thr | ctc Leu | cgg Arg | tgc Ser | cat His 3045 | gcc Ala | cag Gln | cag Gln | cgg Arg | 48859 |
| ttg Leu 3050 | ccg Pro | ggg Gly | tat Tyr | ctg Leu | gtg Val 3055 | ccg Pro | tgc Ser | gcg Ala | ttc Phe | gtg Val 3060 | gag Glu | ctg Leu | gac Asp | cgg Arg | 48904 |
| ttg Leu 3065 | ccg Pro | ttg Leu | acg Thr | gtc Val | aac Asn 3070 | ggc Gly | aag Lys | ctc Leu | gat Asp | cgc Arg 3075 | cgg Arg | gct Ala | ctg Leu | ccg Pro | 48949 |
| gtg Val 3080 | ccg Pro | gac Asp | tac Tyr | ggc Gly | cgg Arg 3085 | gac Asp | gcc Ala | ggg Gly | ggg Gly | ggg Gly 3090 | cgg Arg | gcg Ala | ccg Pro | gcc Ala | 48994 |
| aac Asn 3095 | gct Ala | cgc Arg | gag Glu | gag Glu | gtg Val 3100 | ttg Leu | tgc Cys | cgg Arg | gcg Ala | ttc Phe 3105 | gcc Ala | gag Glu | gtg Val | ctc Leu | 49039 |
| ggc Gly 3110 | gtc Val | gag Glu | cgg Arg | gtg Val | ggg Gly 3115 | gtg Val | gag Glu | gac Asp | gat Asp | ttc Phe 3120 | ttc Phe | gcg Ala | ctg Leu | ggg Gly | 49084 |
| ggg Gly 3125 | cat His | tgc Ser | ctg Leu | ctg Leu | gtg Val 3130 | gtc Val | tgc Ser | ctg Leu | gtg Val | gag Glu 3135 | cgg Arg | ctg Leu | cgc Arg | cgg Arg | 49129 |
| cag Gln 3140 | ggg Gly | atc Ile | tgc Ser | gtg Val | ccg Pro 3145 | gtg Val | cgg Arg | gcg Ala | ttg Leu | ttc Phe 3150 | acc Thr | acg Thr | ccg Pro | acc Thr | 49174 |
| ccg Pro 3155 | gcc Ala | ggg Gly | ctg Leu | gcc Ala | gag Glu 3160 | gcg Ala | gtc Val | ggg Gly | gat Asp | ggg Gly 3165 | gcc Ala | gtg Val | gtg Val | gtg Val | 49219 |
| ccg Pro 3170 | ccg Pro | aac Asn | ctg Leu | att Ile | ccc Pro 3175 | gag Glu | gac Asp | gcg Ala | gcg Ala | gag Glu 3180 | ctg Leu | acc Thr | ccg Pro | gag Glu | 49264 |
| atg Met 3185 | ctg Leu | ccg Pro | ctg Leu | gcc Ala | gat Asp 3190 | ctg Leu | acc Thr | gcc Ala | gac Asp | gaa Glu 3195 | ctt Leu | gct Ala | gtt Val | gtc Val | 49309 |
| gtg Val 3200 | gcg Ala | tgc Ser | gtg Val | ccc Pro | ggg Gly 3205 | ggg Gly | gcg Ala | gcg Ala | aac Asn | atc Ile 3210 | gcg Ala | gat Asp | gtg Val | tat Tyr | 49354 |
| ccg Pro 3215 | ttg Leu | gcg Ala | ccg Pro | ttg Leu | cag Gln 3220 | gag Glu | ggc Gly | att Ile | ttc Phe | ttc Phe 3225 | cat His | cac His | atg Met | atg Met | 49399 |
| gcc | gac | cgg | gat | tgc | gcg | gac | gtg | tat | gtg | acg | ccg | acg | gtg | gtc | 49444 |

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|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------|
| Ala 3230 | Asp | Arg | Asp | Ser | Ala 3235 | Asp | Val | Tyr | Val | Thr 3240 | Pro | Thr | Val | Val | |
| gag 3245 | ttc | gac | tcc | cgg | gac 3250 | cgg | ttg | gac | ggc | ttc 3255 | ctg | gcc | gcc | ttg | 49489 |
| Glu 3245 | Phe | Asp | Ser | Arg | Asp 3250 | Arg | Leu | Asp | Gly | Phe 3255 | Leu | Ala | Ala | Leu | |
| cag 3260 | cag | gtc | gtc | gac | cgc 3265 | acc | gat | gtc | tac | cgc 3270 | acc | agc | gtg | gtg | 49534 |
| Gln 3260 | Gln | Val | Val | Asp | Arg 3265 | Thr | Asp | Val | Tyr | Arg 3270 | Thr | Ser | Val | Val | |
| tgg 3275 | cag | ggg | ctg | cgc | gag 3280 | cgg | gtg | cag | gtg | gtg 3285 | tgg | cgg | cac | gcg | 49579 |
| Trp 3275 | Gln | Gly | Leu | Arg | Glu 3280 | Pro | Val | Gln | Val | Val 3285 | Trp | Arg | His | Ala | |
| cgc 3290 | ctg | cgg | atc | gac | gag 3295 | gtc | gag | ctg | cac | gag 3300 | ggc | acc | gat | cgg | 49624 |
| Arg 3290 | Leu | Pro | Ile | Asp | Glu 3295 | Val | Glu | Leu | His | Glu 3300 | Gly | Thr | Asp | Pro | |
| gcc 3305 | gag | cag | ctg | atc | gcg 3310 | ctc | gcc | acc | gag | cgg 3315 | gtg | gac | ctc | gac | 49669 |
| Ala 3305 | Glu | Gln | Leu | Ile | Ala 3310 | Leu | Ala | Thr | Glu | Arg 3315 | Val | Asp | Leu | Asp | |
| cgc 3320 | gcg | cgg | ctg | atc | cgc 3325 | acg | acg | acc | gcg | gcc 3330 | gtg | ccc | gga | tcc | 49714 |
| Arg 3320 | Ala | Pro | Leu | Ile | Arg 3325 | Thr | Thr | Thr | Ala | Ala 3330 | Val | Pro | Gly | Ser | |
| ggc 3335 | cgg | tgg | ctc | gcg | ctt 3340 | ctg | cgc | atc | cac | cac 3345 | ctc | gtg | cag | gac | 49759 |
| Gly 3335 | Arg | Trp | Leu | Ala | Leu 3340 | Leu | Arg | Ile | His | His 3345 | Leu | Val | Gln | Asp | |
| cac 3350 | acc | acc | ctg | gac | gtg 3355 | ctg | ctc | ggc | gag | ctg 3360 | cgg | gcc | ttc | ctc | 49804 |
| His 3350 | Thr | Thr | Leu | Asp | Val 3355 | Leu | Leu | Gly | Glu | Leu 3360 | Arg | Ala | Phe | Leu | |
| gag 3365 | ggc | cgc | ggc | gac | gag 3370 | ctt | ccc | gag | cgg | gtg 3375 | cgg | ttc | cgc | gag | 49849 |
| Glu 3365 | Gly | Arg | Gly | Asp | Glu 3370 | Leu | Pro | Glu | Pro | Val 3375 | Pro | Phe | Arg | Glu | |
| ttc 3380 | gtg | gcg | cag | gcg | cgg 3385 | ctc | ggt | gtg | cgg | cgc 3390 | gag | gag | cac | gag | 49894 |
| Phe 3380 | Val | Ala | Gln | Ala | Arg 3385 | Leu | Gly | Val | Pro | Arg 3390 | Glu | Glu | His | Glu | |
| cgg 3395 | tac | ttc | gcg | gag | ttg 3400 | ctc | ggc | gac | gtc | acc 3405 | gag | acc | acc | gcg | 49939 |
| Arg 3395 | Tyr | Phe | Ala | Glu | Leu 3400 | Leu | Gly | Asp | Val | Thr 3405 | Glu | Thr | Thr | Ala | |
| cgg 3410 | tac | ggc | ctg | acc | gag 3415 | gtg | cac | ggc | gac | ggg 3420 | tcg | gcc | gcc | gtg | 49984 |
| Pro 3410 | Tyr | Gly | Leu | Thr | Glu 3415 | Val | His | Gly | Asp | Gly 3420 | Ser | Ala | Ala | Val | |
| cac 3425 | agc | cgg | cgc | gag | gtg 3430 | gac | gac | gac | ctc | gcc 3435 | gcg | cgc | ctc | cac | 50029 |
| His 3425 | Ser | Arg | Arg | Glu | Val 3430 | Asp | Asp | Asp | Leu | Ala 3435 | Ala | Arg | Leu | His | |
| cgg 3440 | ctg | gcc | cgg | tcg | ctc 3445 | ggc | gtc | agc | cgg | gcg 3450 | gcg | ctc | ttc | cac | 50074 |
| Arg 3440 | Leu | Ala | Arg | Ser | Leu 3445 | Gly | Val | Ser | Pro | Ala 3450 | Ala | Leu | Phe | His | |
| ctc 3455 | gcg | tgg | gcg | cgg | gtg 3460 | ctc | ggc | gcc | gtg | tcg 3465 | ggc | cgg | gac | gac | 50119 |
| Leu 3455 | Ala | Trp | Ala | Arg | Val 3460 | Leu | Gly | Ala | Val | Ser 3465 | Gly | Arg | Asp | Asp | |
| gtc | gtc | ttc | ggc | acg | gtc | ctg | ttc | ggg | cgg | atg | aac | tcc | ggc | gcc | 50164 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Val 3470 | Val | Phe | Gly | Thr | Val 3475 | Leu | Phe | Gly | Arg | Met 3480 | Asn | Ser | Gly | Ala | |
| gcc Ala 3485 | gcc Ala | gac Asp | cgc Arg | gtg Val | cag Gln 3490 | ggc Gly | ttg Leu | ttc Phe | atc Ile | aac Asn 3495 | acg Thr | ctc Leu | ccg Pro | gtg Val | 50209 |
| cgc Arg 3500 | gtg Val | cgg Arg | ctc Leu | gcc Ala | gcc Ala 3505 | ggc Gly | agc Ser | acc Thr | cgc Arg | gac Asp 3510 | gcc Ala | ctg Leu | acc Thr | ggg Gly | 50254 |
| ctg Leu 3515 | cgg Arg | gac Asp | cag Gln | ctg Leu | gcc Ala 3520 | ggg Gly | ctg Leu | ctg Leu | gtg Val | cac His 3525 | gag Glu | cac His | gcg Ala | ccg Pro | 50299 |
| ctc Leu 3530 | gcg Ala | ctg Leu | gcg Ala | cag Gln | cgc Arg 3535 | gcg Ala | gcc Ala | ggc Gly | atc Ile | acc Thr 3540 | gac Asp | ggc Gly | agc Ser | ccg Pro | 50344 |
| ctg Leu 3545 | ttc Phe | gcg Ala | tcg Ser | atc Ile | ttc Phe 3550 | aac Asn | tac Tyr | cgc Arg | cac His | aac Asn 3555 | cag Gln | gac Asp | gac Asp | ccg Pro | 50389 |
| gcg Ala 3560 | gcg Ala | tcg Ser | gcc Ala | ggg Gly | ctc Leu 3565 | gag Glu | ggc Gly | atc Ile | cgc Arg | acg Thr 3570 | gtc Val | tac Tyr | agc Ser | gcc Ala | 50434 |
| gag Glu 3575 | cac His | acc Thr | aac Asn | tac Tyr | ccg Pro 3580 | ctc Leu | gac Asp | gcc Ala | tcg Ser | atc Ile 3585 | gac Asp | gtc Val | acc Thr | ggc Gly | 50479 |
| gac Asp 3590 | cgc Arg | ttc Phe | gcc Ala | atc Ile | acc Thr 3595 | gtg Val | aac Asn | gcg Ala | gtg Val | gcg Ala 3600 | ccc Pro | gcg Ala | gac Asp | gcc Ala | 50524 |
| gcg Ala 3605 | cgg Arg | atc Ile | gct Ala | gag Glu | ctg Leu 3610 | atg Met | cac His | acc Thr | tgc Cys | ctc Leu 3615 | ggc Gly | cac His | ctc Leu | gcg Ala | 50569 |
| gac Asp 3620 | gtg Val | ctc Leu | gaa Glu | gac Asp | gcg Ala 3625 | ccg Pro | gag Glu | acg Thr | ccg Pro | ctg Leu 3630 | tcg Ser | tgg Trp | gtc Val | agc Ser | 50614 |
| ccg Pro 3635 | ctg Leu | agc Ser | gcg Ala | gag Glu | gat Asp 3640 | ctc Leu | ggc Gly | cgc Arg | atc Ile | gtg Val 3645 | ggc Gly | gac Asp | tgg Trp | aac Asn | 50659 |
| gag Glu 3650 | acg Thr | cgg Arg | cgc Arg | gcg Ala | gtc Val 3655 | acc Thr | cgc Arg | gcg Ala | tcc Ser | gtg Val 3660 | ccg Pro | gag Glu | ctg Leu | ttc Phe | 50704 |
| gcc Ala 3665 | aag Lys | cag Gln | gtg Val | gcc Ala | gcc Ala 3670 | acg Thr | ccg Pro | gac Asp | gcg Ala | atc Ile 3675 | gcg Ala | gtg Val | gcg Ala | ggc Gly | 50749 |
| gag Glu 3680 | ggg Gly | gtg Val | tcg Ser | tgg Trp | tcc Ser 3685 | tat Tyr | cgc Arg | gag Glu | ctc Leu | gat Asp 3690 | gtg Val | cgc Arg | tcg Ser | gat Asp | 50794 |
| gcg Ala 3695 | ctg Leu | gcc Ala | cgg Arg | agt Ser | ctg Leu 3700 | gtg Val | gcg Ala | gcc Ala | ggg Gly | gtg Val 3705 | ggg Gly | atc Ile | gag Glu | tcg Ser | 50839 |
| ccg | gtg | gtg | gtg | gcg | ctc | gat | cgg | tct | ccg | gag | gtg | ccg | acg | gcg | 50884 |

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|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------|
| Pro 3710 | Val | Val | Val | Ala | Leu 3715 | Asp | Arg | Ser | Pro | Glu 3720 | Val | Pro | Thr | Ala | |
| ttc | ctc | gcg | gtg | gcg | aag | gcc | ggc | ggc | gtg | ttc | gtc | ccg | gtg | gac | 50929 |
| Phe 3725 | Leu | Ala | Val | Ala | Lys 3730 | Ala | Gly | Gly | Val | Phe 3735 | Val | Pro | Val | Asp | |
| ttg | tcg | tgg | ccc | cag | gcg | cgt | gtc | gat | gcg | gtg | atc | gcc | gac | tgc | 50974 |
| Leu 3740 | Ser | Trp | Pro | Gln | Ala 3745 | Arg | Val | Asp | Ala | Val 3750 | Ile | Ala | Asp | Cys | |
| gcc | gcg | cgg | gtg | gcg | gtg | gcc | gac | cgg | ccg | atg | acc | ggg | ctg | acg | 51019 |
| Ala 3755 | Ala | Arg | Val | Ala | Val 3760 | Ala | Asp | Arg | Pro | Met 3765 | Thr | Gly | Leu | Thr | |
| gtt | gtg | ccc | gcc | gac | gcg | gcc | ggc | gac | ccg | gct | gcc | gag | ttg | ccg | 51064 |
| Val 3770 | Val | Pro | Ala | Asp | Ala 3775 | Ala | Gly | Asp | Pro | Ala 3780 | Ala | Glu | Leu | Pro | |
| ccc | cgc | ccc | ttg | ccg | ggc | gcg | gag | gtc | tac | cgg | atg | tac | acc | tcc | 51109 |
| Pro 3785 | Arg | Pro | Leu | Pro | Gly 3790 | Ala | Glu | Val | Tyr | Arg 3795 | Met | Tyr | Thr | Ser | |
| ggc | tcg | acg | ggc | cgg | ccc | aag | ggc | gtg | gtg | acc | acc | cac | cag | aac | 51154 |
| Gly 3800 | Ser | Thr | Gly | Arg | Pro 3805 | Lys | Gly | Val | Val | Thr 3810 | Thr | His | Gln | Asn | |
| ctg | gtg | gat | ctg | gcg | acc | gac | acg | tgt | tgg | ggc | ccg | acc | ccg | cgg | 51199 |
| Leu 3815 | Val | Asp | Leu | Ala | Thr 3820 | Asp | Thr | Cys | Trp | Gly 3825 | Pro | Thr | Pro | Arg | |
| gtg | ctt | ttc | cac | gcc | ccg | cac | gcc | ttc | gac | gcg | tcg | tcg | tac | gag | 51244 |
| Val 3830 | Leu | Phe | His | Ala | Pro 3835 | His | Ala | Phe | Asp | Ala 3840 | Ser | Ser | Tyr | Glu | |
| atc | tgg | gtg | ccg | ttg | ctg | aat | ggc | ggc | acg | gtc | gtg | gtc | gcg | ccg | 51289 |
| Ile 3845 | Trp | Val | Pro | Leu | Leu 3850 | Asn | Gly | Gly | Thr | Val 3855 | Val | Val | Ala | Pro | |
| ggg | cgg | agc | atc | gat | gcc | gcc | gtg | ctc | ggc | gag | ctg | atc | cgg | gcg | 51334 |
| Gly 3860 | Arg | Ser | Ile | Asp | Ala 3865 | Ala | Val | Leu | Gly | Glu 3870 | Leu | Ile | Arg | Ala | |
| cat | gag | ttg | acg | cac | gtg | cac | gtc | acc | gcg | ggc | ctg | ctg | cgg | gtg | 51379 |
| His 3875 | Glu | Leu | Thr | His | Val 3880 | His | Val | Thr | Ala | Gly 3885 | Leu | Leu | Arg | Val | |
| ctg | gac | ccg | tcg | tgc | ttc | gcg | ggg | ctg | acc | gag | gtg | ctc | acg | ggc | 51424 |
| Leu 3890 | Asp | Pro | Ser | Cys | Phe 3895 | Ala | Gly | Leu | Thr | Glu 3900 | Val | Leu | Thr | Gly | |
| ggc | gat | gcg | gtg | tcg | gcc | gag | gcg | gtg | cgc | cgg | gtg | atg | gag | gcg | 51469 |
| Gly 3905 | Asp | Ala | Val | Ser | Ala 3910 | Glu | Ala | Val | Arg | Arg 3915 | Val | Met | Glu | Ala | |
| aac | ccg | ggc | ctg | cgg | gta | cgt | cag | ctg | tac | ggc | ccg | acc | gag | gtg | 51514 |
| Asn 3920 | Pro | Gly | Leu | Arg | Val 3925 | Arg | Gln | Leu | Tyr | Gly 3930 | Pro | Thr | Glu | Val | |
| acg | ctg | tgc | gcc | acg | cag | cag | gtg | ctc | gat | ggc | acg | ggc | gtg | ccg | 51559 |
| Thr 3935 | Leu | Cys | Ala | Thr | Gln 3940 | Gln | Val | Leu | Asp | Gly 3945 | Thr | Gly | Val | Pro | |
| atc | ggg | cgg | ccg | ttg | gac | aac | acc | cgc | gtg | tat | gtc | ctg | gat | gac | 51604 |

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|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------|
| Ile 3950 | Gly | Arg | Pro | Leu | Asp 3955 | Asn | Thr | Arg | Val | Tyr 3960 | Val | Leu | Asp | Asp | |
| ttg 3965 | ctg | cag | ccg | gtc | ccg 3970 | gtc | ggg | gtg | acc | ggc 3975 | gag | ctg | tat | gtg | 51649 |
| Leu | Leu | Gln | Pro | Val | Pro | Val | Gly | Val | Thr | Gly | Glu | Leu | Tyr | Val | |
| gcc 3980 | ggg | gcc | ggc | ttg | gcg 3985 | gcg | ggc | tat | gcg | ggc 3990 | atg | ccc | ggg | ttg | 51694 |
| Ala | Gly | Ala | Gly | Leu | Ala | Arg | Gly | Tyr | Ala | Gly | Met | Pro | Gly | Leu | |
| acg 3995 | gcc | gag | cgg | ttc | gtc 4000 | gcc | gac | cgg | ttc | agc 4005 | agc | ggc | ggg | cgc | 51739 |
| Thr | Ala | Glu | Arg | Phe | Val | Ala | Asp | Pro | Phe | Ser | Ser | Gly | Gly | Arg | |
| ctc 4010 | tac | cgc | acg | ggg | gat 4015 | ctg | gtg | cgg | tgg | acc 4020 | gat | gac | ggg | gtg | 51784 |
| Leu | Tyr | Arg | Thr | Gly | Asp | Leu | Val | Arg | Trp | Thr | Asp | Asp | Gly | Val | |
| ctg 4025 | gtg | ttc | gcg | ggc | cgg 4030 | gcc | gat | gat | cag | gtg 4035 | aag | att | cgt | ggc | 51829 |
| Leu | Val | Phe | Ala | Gly | Arg | Ala | Asp | Asp | Gln | Val | Lys | Ile | Arg | Gly | |
| tat 4040 | cgg | gtg | gag | cgg | ggc 4045 | gag | gtc | gag | gct | gtc 4050 | ttg | gcc | gcg | cat | 51874 |
| Tyr | Arg | Val | Glu | Pro | Gly | Glu | Val | Glu | Ala | Val | Leu | Ala | Ala | His | |
| cgg 4055 | gac | gtg | gct | cag | gtg 4060 | gca | gtg | gtc | gtc | cgg 4065 | gag | gac | acc | cca | 51919 |
| Pro | Asp | Val | Ala | Gln | Val | Ala | Val | Val | Val | Arg | Glu | Asp | Thr | Pro | |
| ggg 4070 | gat | aag | cgg | ctg | gtc 4075 | gcc | tac | gtc | gtc | ggc 4080 | ggc | gat | gtc | gag | 51964 |
| Gly | Asp | Lys | Arg | Leu | Val | Ala | Tyr | Val | Val | Gly | Gly | Asp | Val | Glu | |
| gcg 4085 | tat | gcg | cag | gag | cgc 4090 | ctt | cgg | ggc | tac | ctg 4095 | gtc | ccg | tcg | gcc | 52009 |
| Ala | Tyr | Ala | Gln | Glu | Arg | Leu | Pro | Gly | Tyr | Leu | Val | Pro | Ser | Ala | |
| ttc 4100 | gtc | cat | ctg | gac | gcg 4105 | ctg | cgg | ctg | acc | agc 4110 | aac | cag | aag | gtc | 52054 |
| Phe | Val | His | Leu | Asp | Ala | Leu | Pro | Leu | Thr | Ser | Asn | Gln | Lys | Val | |
| gac 4115 | cgg | gcc | gca | ctg | ccc 4120 | gcg | cgg | tcg | gtg | gag 4125 | tcg | ggc | gcg | ggc | 52099 |
| Asp | Arg | Ala | Ala | Leu | Pro | Ala | Pro | Ser | Val | Glu | Ser | Gly | Ala | Gly | |
| cgg 4130 | gcg | ccc | gcc | gac | gcg 4135 | cgt | gaa | gag | ctg | atg 4140 | tgt | gcc | gcg | ttt | 52144 |
| Arg | Ala | Pro | Ala | Asp | Ala | Arg | Glu | Glu | Leu | Met | Cys | Ala | Ala | Phe | |
| gcc 4145 | gag | gtg | ctc | gac | ctg 4150 | gat | cgg | gtc | ggg | gtc 4155 | gac | gac | gac | ttc | 52189 |
| Ala | Glu | Val | Leu | Asp | Leu | Asp | Arg | Val | Gly | Val | Asp | Asp | Asp | Phe | |
| ttc 4160 | gct | ttg | ggg | ggg | cat 4165 | tcg | ctg | ttg | gtg | gtg 4170 | cgg | ttg | gtg | ggc | 52234 |
| Phe | Ala | Leu | Gly | Gly | His | Ser | Leu | Leu | Val | Val | Arg | Leu | Val | Gly | |
| cgt 4175 | att | cgg | cag | gtg | ttc 4180 | ggg | gtg | gag | gtg | tcg 4185 | gct | cgg | ctg | gtc | 52279 |
| Arg | Ile | Arg | Gln | Val | Phe | Gly | Val | Glu | Val | Ser | Ala | Arg | Leu | Val | |
| ttc | gat | gcg | cgg | act | ccg | gcc | ggg | gtg | gtg | gcc | cgc | ttg | tcg | gag | 52324 |

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| | | | | | | | | | | | | | | | |
|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Phe 4190 | Asp | Ala | Arg | Thr | Pro 4195 | Ala | Gly | Val | Val | Ala 4200 | Arg | Leu | Ser | Glu | |
| ggc Gly 4205 | ggc Gly | acg Thr | gcc Ala | cgg Arg | gag Glu 4210 | gcg Ala | gtg Val | cgg Arg | gcg Ala | cgg Arg 4215 | gtg Val | cgt Arg | ccc Pro | gcg Ala | 52369 |
| cgg Arg 4220 | gtg Val | cgg Pro | ttg Leu | tcg Ser | ttc Phe 4225 | gcg Ala | caa Gln | cgc Arg | cgg Arg | ttg Leu 4230 | tgg Trp | ttc Phe | ctg Leu | tcc Ser | 52414 |
| cag Gln 4235 | ctg Leu | gac Asp | ggc Gly | acg Thr | agc Ser 4240 | acg Thr | acc Thr | tac Tyr | aac Asn | atc Ile 4245 | ccg Pro | gtc Val | gcg Ala | ctg Leu | 52459 |
| caa Gln 4250 | ctc Leu | gac Asp | ggc Gly | cgg Pro | ctc Leu 4255 | gat Asp | cgg Arg | gac Asp | gcc Ala | ttc Phe 4260 | acc Thr | gcg Ala | gca Ala | ctg Leu | 52504 |
| cac His 4265 | gat Asp | gtg Val | gtc Val | gcc Ala | cgg Arg 4270 | cac His | gag Glu | gtg Val | ctg Leu | cgt Arg 4275 | acc Thr | gtc Val | ttc Phe | acc Thr | 52549 |
| gtc Val 4280 | gcc Ala | gat Asp | ggc Gly | gag Glu | cgg Pro 4285 | tgg Trp | caa Gln | cac His | atc Ile | ctc Leu 4290 | gac Asp | acg Thr | cgg Pro | tcg Ser | 52594 |
| gtg Val 4295 | agc Ser | gtc Val | ccc Pro | gtc Val | atc Ile 4300 | gag Glu | gtg Val | ccc Pro | gcc Ala | gac Asp 4305 | ggg Gly | ctt Leu | cgg Pro | gag Glu | 52639 |
| gcg Ala 4310 | gtg Val | gcc Ala | gcg Ala | gcg Ala | gcc Ala 4315 | gcg Ala | cac His | acc Thr | ttc Phe | gac Asp 4320 | ctg Leu | agc Ser | cgg Arg | gag Glu | 52684 |
| atc Ile 4325 | ccg Pro | ctc Leu | cgg Arg | gcg Ala | gtg Val 4330 | ctg Leu | ctc Leu | gcc Ala | acc Thr | ggc Gly 4335 | gcc Ala | gac Asp | cgg Arg | cac His | 52729 |
| gtg Val 4340 | ctg Leu | gtg Val | ctg Leu | gtc Val | gtg Val 4345 | cat His | cac His | atc Ile | gcc Ala | gcc Ala 4350 | gac Asp | ggc Gly | tgg Trp | tcg Ser | 52774 |
| atg Met 4355 | cag Gln | ccc Pro | ctc Leu | gcc Ala | cgg Arg 4360 | gac Asp | ctc Leu | gcc Ala | gtc Val | gcc Ala 4365 | tac Tyr | gcc Ala | gcc Ala | cgg Arg | 52819 |
| atc Ile 4370 | cgg Arg | ggc Gly | gag Glu | gcg Ala | cgg Pro 4375 | gcc Ala | tgg Trp | acc Thr | gcc Ala | ctg Leu 4380 | ccc Pro | gtc Val | cag Gln | tac Tyr | 52864 |
| gcc Ala 4385 | gac Asp | tac Tyr | gcc Ala | ctg Leu | tgg Trp 4390 | cag Gln | cgc Arg | gac Asp | gtg Val | ctc Leu 4395 | ggc Gly | tcc Ser | gag Glu | cac His | 52909 |
| gac Asp 4400 | ccg Pro | gac Asp | agc Ser | gcc Ala | atc Ile 4405 | tcc Ser | cag Gln | cag Gln | gtc Val | gcc Ala 4410 | cat His | tgg Trp | cgg Arg | cga Arg | 52954 |
| cag Gln 4415 | ctc Leu | gcc Ala | gga Gly | gcc Ala | ccc Pro 4420 | gac Asp | gag Glu | cta Leu | cgg Pro | ctg Leu 4425 | ccc Pro | gcc Ala | gac Asp | cac His | 52999 |
| ccc | cgt | ccc | gcc | gag | gcc | acc | tac | cgc | ggc | cac | acc | gtg | gag | ttc | 53044 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Pro 4430 | Arg | Pro | Ala | Glu | Ala 4435 | Thr | Tyr | Arg | Gly | His 4440 | Thr | Val | Glu | Phe | |
| acc 4445 | gtg Val | ccc Pro | ccg Pro | gcc Ala | gtg Val 4450 | cac His | cac His | caa Gln | ctc Leu | gcc Ala 4455 | gaa Glu | ctc Leu | gcc Ala | cgc Arg | 53089 |
| cgc 4460 | aac Arg | ggc Asn | gtc Gly | acc Val | gtc Val 4465 | ttc Phe | atg Met | acc Thr | gtg Val | caa Gln 4470 | acc Thr | gcc Ala | ctc Leu | gcc Ala | 53134 |
| gtc Val 4475 | ctc Leu | ctg Leu | tcc Ser | aaa Lys | ctc Leu 4480 | ggc Gly | gcc Ala | ggc Gly | acc Thr | gac Asp 4485 | atc Ile | ccc Pro | atc Ile | ggc Gly | 53179 |
| gtc Val 4490 | gcc Ala | gtc Val | gcc Ala | gga Gly | cgc Arg 4495 | acc Thr | gac Asp | ccc Pro | acc Thr | ctc Leu 4500 | gac Asp | aac Asn | ctc Leu | atc Ile | 53224 |
| ggc Gly 4505 | ttc Phe | ttc Phe | gtc Val | aac Asn | acc Thr 4510 | ctc Leu | gtc Val | cta Leu | cgc Arg | acc Thr 4515 | gac Asp | ctg Leu | acc Thr | ggc Gly | 53269 |
| aac Asn 4520 | ccc Pro | acc Thr | atc Ile | acc Thr | gac Asp 4525 | ctg Leu | ctg Leu | cac His | cgc Arg | acc Thr 4530 | cgc Arg | gac Asp | acc Thr | acc Thr | 53314 |
| ctg Leu 4535 | cac His | gcc Ala | ttc Phe | acc Thr | cac His 4540 | caa Gln | gac Asp | gtc Val | ccc Pro | ttc Phe 4545 | gaa Glu | aaa Lys | ctc Leu | gtc Val | 53359 |
| gaa Glu 4550 | gac Asp | ctc Leu | gca Ala | ccc Pro | acc Thr 4555 | cgc Arg | tcc Ser | ctc Leu | gcc Ala | cgc Arg 4560 | cac His | ccc Pro | ctc Leu | ttc Phe | 53404 |
| cag Gln 4565 | gtc Val | atg Met | atg Met | acc Thr | ctg Leu 4570 | cag Gln | agc Ser | acc Thr | ggg Gly | cgg Arg 4575 | gcc Ala | ggc Gly | gag Glu | gcg Ala | 53449 |
| gcc Ala 4580 | gag Glu | ctg Leu | ccc Pro | ggc Gly | ctg Leu 4585 | gag Glu | acg Thr | gcg Ala | gtg Val | ctg Leu 4590 | tcg Ser | ccg Pro | ggc Gly | ggc Gly | 53494 |
| gtc Val 4595 | gcc Ala | gcc Ala | aag Lys | gtc Val | gac Asp 4600 | ctc Leu | gac Asp | ctg Leu | agc Ser | ctg Leu 4605 | agc Ser | gag Glu | gcg Ala | tac Tyr | 53539 |
| gac Asp 4610 | gac Asp | gac Asp | ggc Gly | cgc Arg | ccg Pro 4615 | gcg Ala | ggt Gly | ctc Leu | gcc Ala | gga Gly 4620 | acg Thr | ctc Leu | gtc Val | gcg Ala | 53584 |
| gcg Ala 4625 | gcc Ala | gac Asp | ctg Leu | ttc Phe | gag Glu 4630 | cac His | ggc Gly | acc Thr | gcc Ala | gag Glu 4635 | cgg Arg | atc Ile | gcc Ala | ggt Gly | 53629 |
| tac Tyr 4640 | ctc Leu | gcg Ala | cgg Arg | ctg Leu | ctc Leu 4645 | gcc Ala | gtg Val | ctg Leu | ccc Pro | gcc Ala 4650 | gat Asp | ccc Pro | ggc Gly | gcc Ala | 53674 |
| cgg Arg 4655 | ctc Leu | ggc Gly | gac Asp | gtg Val | gac Asp 4660 | ctg Leu | ctc Leu | gac Asp | ggc Gly | gag Glu 4665 | gag Glu | cgg Arg | cgg Arg | ctg Leu | 53719 |
| gtc | ctc | acc | ggc | tgg | aac | gac | acg | acg | gcg | gcc | gtg | ccg | gcg | gtg | 53764 |

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|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------|
| Val 4670 | Leu | Thr | Gly | Trp | Asn 4675 | Asp | Thr | Thr | Ala | Ala 4680 | Val | Pro | Ala | Val | |
| gcg 4685 | gtg | ccc | gag | ctg | atc 4690 | gag | cgg | cgt | gcc | gcc 4695 | gcc | gaa | ccg | gag | 53809 |
| Ala | Val | Pro | Glu | Leu | Ile | Glu | Arg | Arg | Ala | Ala | Ala | Glu | Pro | Glu | |
| gcc 4700 | ggc | gcc | gtc | tgg | tgc 4705 | ggc | gac | acg | cac | ctg 4710 | cgg | tac | ggc | gag | 53854 |
| Ala | Gly | Ala | Val | Trp | Cys | Gly | Asp | Thr | His | Leu | Arg | Tyr | Gly | Glu | |
| ctg 4715 | aac | gcc | cgc | gcg | aac 4720 | cgc | ctc | gcc | cgg | ctg 4725 | ctc | gtg | gag | cgc | 53899 |
| Leu | Asn | Ala | Arg | Ala | Asn | Arg | Leu | Ala | Arg | Leu | Leu | Val | Glu | Arg | |
| ggg 4730 | gcg | gga | ccc | gag | tgc 4735 | atc | gtc | gcg | gtc | tgc 4740 | ctg | gaa | cgc | tgc | 53944 |
| Gly | Ala | Gly | Pro | Glu | Ser | Ile | Val | Ala | Val | Cys | Leu | Glu | Arg | Ser | |
| gcc 4745 | gac | ctc | gtc | gtc | acg 4750 | ctg | ctg | gcc | gtg | ctg 4755 | aag | acc | ggg | gcc | 53989 |
| Ala | Asp | Leu | Val | Val | Thr | Leu | Leu | Ala | Val | Leu | Lys | Thr | Gly | Ala | |
| gcc 4760 | tac | ctg | ccg | atc | gat 4765 | ccc | gga | tat | ccg | gcc 4770 | ggc | cgg | atc | gcc | 54034 |
| Ala | Tyr | Leu | Pro | Ile | Asp | Pro | Gly | Tyr | Pro | Ala | Gly | Arg | Ile | Ala | |
| tac 4775 | atg | ctc | gcc | gac | gcc 4780 | cgc | ccc | gcg | ctg | ctc 4785 | gtc | acg | agc | ccg | 54079 |
| Tyr | Met | Leu | Ala | Asp | Ala | Arg | Pro | Ala | Leu | Leu | Val | Thr | Ser | Pro | |
| gcg 4790 | gtc | gcc | tcc | ggt | gac 4795 | agc | ctc | ccg | gac | ggt 4800 | ggc | gcg | caa | cgg | 54124 |
| Ala | Val | Ala | Ser | Gly | Asp | Ser | Leu | Pro | Asp | Gly | Gly | Ala | Gln | Arg | |
| atc 4805 | gtc | ctc | ggc | gat | ccg 4810 | gac | acc | gcg | gcg | gcc 4815 | ctc | gac | ggc | ctc | 54169 |
| Ile | Val | Leu | Gly | Asp | Pro | Asp | Thr | Ala | Ala | Ala | Leu | Asp | Gly | Leu | |
| gcc 4820 | ggc | acc | gac | ctg | ctc 4825 | gtc | tgc | gag | cgg | cgc 4830 | ggc | gtc | acg | cac | 54214 |
| Ala | Gly | Thr | Asp | Leu | Leu | Val | Ser | Glu | Arg | Arg | Gly | Val | Thr | His | |
| ccg 4835 | gca | cat | ccg | gcg | tac 4840 | gtc | atc | tac | acc | tcc 4845 | ggg | tgc | acc | ggg | 54259 |
| Pro | Ala | His | Pro | Ala | Tyr | Val | Ile | Tyr | Thr | Ser | Gly | Ser | Thr | Gly | |
| cgc 4850 | ccc | aag | ggt | gtc | gtc 4855 | gtg | ccg | cac | ggg | gcc 4860 | ctc | acg | aat | ttc | 54304 |
| Arg | Pro | Lys | Gly | Val | Val | Val | Pro | His | Gly | Ala | Leu | Thr | Asn | Phe | |
| gtg 4865 | gcg | gcg | atg | agc | gac 4870 | cgg | ctc | gcg | ctg | ggc 4875 | gcc | ggc | gac | cgg | 54349 |
| Val | Ala | Ala | Met | Ser | Asp | Arg | Leu | Ala | Leu | Gly | Ala | Gly | Asp | Arg | |
| ctg 4880 | ctc | gcg | gtc | acc | acg 4885 | gtc | gcc | ttc | gac | atc 4890 | cac | gtc | ctg | gag | 54394 |
| Leu | Leu | Ala | Val | Thr | Thr | Val | Ala | Phe | Asp | Ile | His | Val | Leu | Glu | |
| ctc 4895 | tac | gtg | ccg | ctg | gtc 4900 | ggc | ggc | gcc | gga | gtg 4905 | gtc | gtc | gcc | gag | 54439 |
| Leu | Tyr | Val | Pro | Leu | Val | Gly | Gly | Ala | Gly | Val | Val | Val | Ala | Glu | |
| gac | gcc | gtg | gtg | cgc | gac | ccg | gcc | gcg | gtc | gcc | gcg | ctc | ctc | gac | 54484 |

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| | | | | | | | | | | | | | | | |
|--------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------|
| Asp 4910 | Ala | Val | Val | Arg | Asp 4915 | Pro | Ala | Ala | Val | Ala 4920 | Ala | Leu | Leu | Asp | |
| cgg 4925 | cac | gcc | gtg | acg | atc 4930 | gtg | cag | gcc | acc | cgg 4935 | gcg | ctg | tgg | cag | 54529 |
| Arg 4925 | His | Ala | Val | Thr | Ile 4930 | Val | Gln | Ala | Thr | Pro 4935 | Ala | Leu | Trp | Gln | |
| gcg 4940 | ctg | ctc | gcc | ggg | cac 4945 | gcc | gac | gcc | gtc | cgc 4950 | gac | gtg | cgg | ctg | 54574 |
| Ala 4940 | Leu | Leu | Ala | Gly | His 4945 | Ala | Asp | Ala | Val | Arg 4950 | Asp | Val | Arg | Leu | |
| ctc 4955 | gtc | ggc | ggc | gag | gcg 4960 | ctg | ccg | ccc | gcg | ctc 4965 | gcc | ggc | cgg | atg | 54619 |
| Leu 4955 | Val | Gly | Gly | Glu | Ala 4960 | Leu | Pro | Pro | Ala | Leu 4965 | Ala | Gly | Arg | Met | |
| gcc 4970 | gcg | gcc | ggt | cgc | ggt 4975 | gtc | acc | aac | ctg | tac 4980 | ggc | ccg | acc | gag | 54664 |
| Ala 4970 | Ala | Ala | Gly | Arg | Gly 4975 | Val | Thr | Asn | Leu | Tyr 4980 | Gly | Pro | Thr | Glu | |
| gtc 4985 | acc | gtg | tgg | gcg | acc 4990 | gtc | gcc | gac | ctc | ggc 4995 | gcg | agc | ccg | gcc | 54709 |
| Val 4985 | Thr | Val | Trp | Ala | Thr 4990 | Val | Ala | Asp | Leu | Gly 4995 | Ala | Ser | Pro | Ala | |
| ggg 5000 | ccg | gtg | ccg | atc | ggc 5005 | acg | ccc | ctg | cgc | aac 5010 | acc | cgc | gcc | ttc | 54754 |
| Gly 5000 | Pro | Val | Pro | Ile | Gly 5005 | Thr | Pro | Leu | Arg | Asn 5010 | Thr | Arg | Ala | Phe | |
| gtt 5015 | ctc | gac | gac | gcg | ctg 5020 | cgc | ccg | gtg | ccg | ccg 5025 | ggc | gtg | ccg | ggc | 54799 |
| Val 5015 | Leu | Asp | Asp | Ala | Leu 5020 | Arg | Pro | Val | Pro | Pro 5025 | Gly | Val | Pro | Gly | |
| gag 5030 | ctc | tac | ctc | gcc | ggc 5035 | gat | cag | ctc | gcg | cgg 5040 | ggc | tac | cac | ggc | 54844 |
| Glu 5030 | Leu | Tyr | Leu | Ala | Gly 5035 | Asp | Gln | Leu | Ala | Arg 5040 | Gly | Tyr | His | Gly | |
| cgg 5045 | gcc | ggc | ctg | acc | gcc 5050 | gag | cgc | ttc | gtg | gcc 5055 | gac | ccg | ttc | ggc | 54889 |
| Arg 5045 | Ala | Gly | Leu | Thr | Ala 5050 | Glu | Arg | Phe | Val | Ala 5055 | Asp | Pro | Phe | Gly | |
| cgc 5060 | ggt | gag | cgg | atg | tac 5065 | cgc | acc | ggc | gac | cgg 5070 | gtc | cgg | tgg | acc | 54934 |
| Arg 5060 | Gly | Glu | Arg | Met | Tyr 5065 | Arg | Thr | Gly | Asp | Arg 5070 | Val | Arg | Trp | Thr | |
| cgc 5075 | ggc | ggc | agc | ctg | gag 5080 | ttc | ctg | ggc | cgc | gtc 5085 | gac | gac | cag | gtc | 54979 |
| Arg 5075 | Gly | Gly | Ser | Leu | Glu 5080 | Phe | Leu | Gly | Arg | Val 5085 | Asp | Asp | Gln | Val | |
| aag 5090 | atc | cgc | ggt | ttc | cgg 5095 | atc | gag | ctg | ggc | gag 5100 | gtc | gag | gcg | gcg | 55024 |
| Lys 5090 | Ile | Arg | Gly | Phe | Arg 5095 | Ile | Glu | Leu | Gly | Glu 5100 | Val | Glu | Ala | Ala | |
| ctt 5105 | gcc | gcg | ttc | ggg | ccg 5110 | gtg | gcc | cgg | gcg | gcc 5115 | gcc | gcc | gtc | cgc | 55069 |
| Leu 5105 | Ala | Ala | Phe | Gly | Pro 5110 | Val | Ala | Arg | Ala | Ala 5115 | Ala | Ala | Val | Arg | |
| gag 5120 | gac | gtg | ccg | ggc | gac 5125 | cgc | cgg | ctc | gtc | ggc 5130 | tat | gtc | gtg | ccg | 55114 |
| Glu 5120 | Asp | Val | Pro | Gly | Asp 5125 | Arg | Arg | Leu | Val | Gly 5130 | Tyr | Val | Val | Pro | |
| gcc 5135 | gcc | ggc | gag | ccg | gag 5140 | ccc | gac | ccg | gcg | gcg 5145 | gtc | cgc | gcg | cac | 55159 |
| Ala 5135 | Ala | Gly | Glu | Pro | Glu 5140 | Pro | Asp | Pro | Ala | Ala 5145 | Val | Arg | Ala | His | |
| gtc 55204 | gcc | gcc | cag | ctg | ccc | gcc | tac | atg | gtc | ccg | tcg | gcg | gtc | gtg | 55204 |

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| | | | | | | | | | | | | | | | |
|--------------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------|
| Val 5150 | Ala | Ala | Gln | Leu | Pro 5155 | Ala | Tyr | Met | Val | Pro 5160 | Ser | Ala | Val | Val | |
| gtc Val 5165 | ctg | ccc | gac | ctg | ccg 5170 | ctg | acc | gcg | aac | ggc 5175 | aag | ctc | gac | cgc | 55249 |
| | Leu | Pro | Asp | Leu | Pro | Leu | Thr | Ala | Asn | Gly | Lys | Leu | Asp | Arg | |
| aag Lys 5180 | gcg | ctg | ccg | gca | ccc 5185 | gac | tac | ggc | gcc | gcc 5190 | tcc | gcc | ggc | cgg | 55294 |
| | Ala | Leu | Pro | Ala | Pro | Asp | Tyr | Gly | Ala | Ala | Ser | Ala | Gly | Arg | |
| gca Ala 5195 | ccg | gcc | gac | gag | cgc 5200 | gag | gcg | ctc | atc | tgc 5205 | gcg | gtg | ttc | gcc | 55339 |
| | Pro | Ala | Asp | Glu | Arg | Glu | Ala | Leu | Ile | Cys | Ala | Val | Phe | Ala | |
| gag Glu 5210 | acg | ctc | ggc | gtg | acc 5215 | gac | gtc | gca | gcc | gat 5220 | gcc | gac | ttc | ttc | 55384 |
| | Thr | Leu | Gly | Val | Thr | Asp | Val | Ala | Ala | Asp | Ala | Asp | Phe | Phe | |
| gcc Ala 5225 | ctg | ggc | ggc | cat | tgc 5230 | ctg | ctg | gcc | gtg | tgc 5235 | ctg | gtc | gaa | cgg | 55429 |
| | Leu | Gly | Gly | His | Ser | Leu | Leu | Ala | Val | Ser | Leu | Val | Glu | Arg | |
| ttg Leu 5240 | cgc | gag | cac | ggc | atc 5245 | gcg | gtt | ccg | gtc | cgc 5250 | gcc | ctg | ttc | cag | 55474 |
| | Arg | Glu | His | Gly | Ile | Ala | Val | Pro | Val | Arg | Ala | Leu | Phe | Gln | |
| tgc Ser 5255 | ggc | acc | ccc | gag | ggc 5260 | ctg | gcc | gcc | gcg | gcc 5265 | cgc | gcc | gag | ggc | 55519 |
| | Gly | Thr | Pro | Glu | Gly | Leu | Ala | Ala | Ala | Ala | Arg | Ala | Glu | Gly | |
| ccg Pro 5270 | gac | gag | ccg | gcc | gtg 5275 | ccg | gcc | aac | ggc | atc 5280 | ccg | gac | ggc | gcc | 55564 |
| | Asp | Glu | Pro | Ala | Val | Pro | Ala | Asn | Gly | Ile | Pro | Asp | Gly | Ala | |
| acc Thr 5285 | gcg | ctc | acg | ccg | gcg 5290 | atg | ctc | acc | ctc | gtc 5295 | gac | ctc | gac | gcc | 55609 |
| | Ala | Leu | Thr | Pro | Ala | Met | Leu | Thr | Leu | Val | Asp | Leu | Asp | Ala | |
| gag Glu 5300 | gag | atc | gcc | cgg | gtg 5305 | gtc | gcc | gcc | gtg | ccc 5310 | ggc | ggg | gcc | gcg | 55654 |
| | Glu | Ile | Ala | Arg | Val | Val | Ala | Ala | Val | Pro | Gly | Gly | Ala | Ala | |
| aac Asn 5315 | gtg | gcc | gac | gtc | tat 5320 | ccg | ctc | gcg | ccg | ctg 5325 | cag | gag | ggg | ctg | 55699 |
| | Val | Ala | Asp | Val | Tyr | Pro | Leu | Ala | Pro | Leu | Gln | Glu | Gly | Leu | |
| ctc Leu 5330 | ttc | cac | agc | ctg | atg 5335 | gac | ggc | ggc | gac | gac 5340 | gtg | tac | gtg | ctg | 55744 |
| | Phe | His | Ser | Leu | Met | Asp | Gly | Gly | Asp | Asp | Val | Tyr | Val | Leu | |
| ccg Pro 5345 | gcc | gtc | ctc | gga | ttc 5350 | gat | tgc | cgg | tcc | cgc 5355 | ctc | gac | gcg | ttc | 55789 |
| | Ala | Val | Leu | Gly | Phe | Asp | Ser | Arg | Ser | Arg | Leu | Asp | Ala | Phe | |
| ctg Leu 5360 | gcc | gcg | ctg | caa | cac 5365 | gtg | atc | gac | cgg | cac 5370 | gac | acg | tac | cgg | 55834 |
| | Ala | Ala | Leu | Gln | His | Val | Ile | Asp | Arg | His | Asp | Thr | Tyr | Arg | |
| acc Thr 5375 | gcg | gtg | gtg | cac | gac 5380 | ggc | ctg | cgc | gag | ccg 5385 | gtg | cag | gtg | gtc | 55879 |
| | Ala | Val | Val | His | Asp | Gly | Leu | Arg | Glu | Pro | Val | Gln | Val | Val | |
| tgg 5390 | cgc | cgg | gcc | acg | ctg | ccg | gtc | gag | gag | gtg | acc | ctg | acc | gcg | 55924 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Trp 5390 | Arg | Arg | Ala | Thr | Leu 5395 | Pro | Val | Glu | Glu | Val 5400 | Thr | Leu | Thr | Ala | |
| ggc Gly 5405 | gcc Ala | gac Asp | ccg Pro | gtg Val | cag Gln 5410 | gaa Glu | ctg Leu | ctc Leu | gcc Ala | acc Thr 5415 | gcg Ala | ccg Pro | gtc Val | gag Glu | 55969 |
| ttc Phe 5420 | gcg Ala | ctc Leu | gac Asp | cgg Arg | gcc Ala 5425 | ccg Pro | ctg Leu | ctg Leu | cgg Arg | gtg Val 5430 | cgc Arg | tgc Cys | gcg Ala | gcc Ala | 56014 |
| cgg Arg 5435 | ccg Pro | gac Asp | ggc Gly | ggc Gly | gga Gly 5440 | tgg Trp | ctg Leu | gcg Ala | ctg Leu | ctc Leu 5445 | cag Gln | atc Ile | cac His | cac His | 56059 |
| ctc Leu 5450 | gtc Val | cag Gln | gac Asp | cac His | gcc Ala 5455 | acg Thr | ctc Leu | gac Asp | gcg Ala | atg Met 5460 | ctc Leu | gcc Ala | gag Glu | atc Ile | 56104 |
| cag Gln 5465 | gcc Ala | ttc Phe | ctc Leu | gcc Ala | ggc Gly 5470 | cgc Arg | ggc Gly | ggc Gly | gag Glu | ctc Leu 5475 | gcc Ala | gcg Ala | ccc Pro | gag Glu | 56149 |
| ccg Pro 5480 | ttc Phe | cgc Arg | ggc Gly | tac Tyr | gtc Val 5485 | gcc Ala | cgg Arg | gcc Ala | cgg Arg | ctc Leu 5490 | gcc Ala | ggc Gly | gcg Ala | ccg Pro | 56194 |
| gcc Ala 5495 | gag Glu | cac His | cgg Arg | gcg Ala | tac Tyr 5500 | ttc Phe | tcc Ser | cgg Arg | ctg Leu | ctc Leu 5505 | ggt Gly | gac Asp | gtc Val | acc Thr | 56239 |
| gag Glu 5510 | agc Ser | acc Thr | gcc Ala | ccg Pro | tac Tyr 5515 | ggg Gly | ctg Leu | acc Thr | gac Asp | gcg Ala 5520 | cgg Arg | gac Asp | gcg Ala | cgg Arg | 56284 |
| ccg Pro 5525 | acc Thr | gga Gly | aag Lys | gcc Ala | cat His 5530 | cgc Arg | gag Glu | gtc Val | gac Asp | cgg Arg 5535 | cgg Arg | ctg Leu | gcc Ala | gcc Ala | 56329 |
| cgc Arg 5540 | gtg Val | cgg Arg | gcc Ala | acg Thr | gcg Ala 5545 | agc Ser | gag Glu | ctg Leu | ggc Gly | gtg Val 5550 | agc Ser | ccg Pro | gcg Ala | acc Thr | 56374 |
| gtg Val 5555 | ttc Phe | cat His | ctc Leu | gcc Ala | tgg Trp 5560 | gcg Ala | cgg Arg | gtg Val | ctg Leu | ggc Gly 5565 | acg Thr | ctt Leu | gcc Ala | ggc Gly | 56419 |
| cgc Arg 5570 | gac Asp | gac Asp | gtc Val | gtc Val | ttc Phe 5575 | ggc Gly | acc Thr | gtc Val | ctg Leu | ctg Leu 5580 | gga Gly | cgg Arg | ctc Leu | ggc Gly | 56464 |
| gcc Ala 5585 | ggc Gly | gcc Ala | cgg Arg | tcc Ser | ggg Gly 5590 | cga Arg | gcc Ala | ctc Leu | ggc Gly | ccg Pro 5595 | ttc Phe | atc Ile | aac Asn | acc Thr | 56509 |
| ctg Leu 5600 | ccg Pro | gtg Val | cgg Arg | gtg Val | cgc Arg 5605 | ctc Leu | gcc Ala | gcc Ala | gcc Ala | ggc Gly 5610 | agc Ser | cgc Arg | gag Glu | acg Thr | 56554 |
| ctg Leu 5615 | gcc Ala | ggg Gly | ctg Leu | cgc Arg | gcc Ala 5620 | cag Gln | ctg Leu | gcc Ala | gag Glu | ctg Leu 5625 | atc Ile | ggt Gly | cac His | gag Glu | 56599 |
| cac | gcc | ccg | ctg | acg | ctg | gca | cag | gcc | gcg | agc | ggc | gtg | ccc | ggc | 56644 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| His 5630 | Ala | Pro | Leu | Thr | Leu 5635 | Ala | Gln | Ala | Ala | Ser 5640 | Gly | Val | Pro | Gly | |
| ggg Gly 5645 | acg Thr | cgc Pro | ctg Leu | ttc Phe | acc Thr 5650 | tcg Ser | atc Ile | ctc Leu | aac Asn | tac Tyr 5655 | cgg Arg | cag Gln | ggg Gly | cgc Pro | 56689 |
| ccc Pro 5660 | gcc Ala | ggc Gly | gac Asp | gac Asp | acc Thr 5665 | ggc Gly | gac Asp | gag Glu | gag Glu | atc Ile 5670 | gag Glu | ggc Gly | atc Ile | gag Glu | 56734 |
| ctg Leu 5675 | ctc Leu | tcc Ser | acc Thr | gag Glu | gaa Glu 5680 | cgc Arg | agc Ser | aac Asn | tac Tyr | cgc Pro 5685 | gtg Val | gcc Ala | gtc Val | tcc Ser | 56779 |
| gtc Val 5690 | gac Asp | gac Asp | gac Asp | ggg Gly | tcg Ser 5695 | ggc Gly | ttc Phe | cgc Arg | ctc Leu | acc Thr 5700 | gtc Val | gac Asp | ggc Ala | gcc Ala | 56824 |
| cag Gln 5705 | cgc Pro | ggc Ala | gca Ala | cgc Pro | gac Asp 5710 | cgc Arg | gtc Val | ggc Ala | gag Glu | ctg Leu 5715 | ctg Leu | cac His | acc Thr | tgc Cys | 56869 |
| ctg Leu 5720 | cac His | cgc Arg | ctc Leu | acc Thr | gac Asp 5725 | ggc Ala | ctc Leu | ggc Ala | ggc Gly | acc Thr 5730 | ccc Pro | gac Asp | gtg Val | gag Glu | 56914 |
| cgc Pro 5735 | ggc Ala | cgc Arg | atc Ile | gac Asp | gtg Val 5740 | ctc Leu | ggc Gly | gag Glu | ggc Ala | gag Glu 5745 | cgc Arg | cgc Arg | gag Glu | gtt Val | 56959 |
| ctc Leu 5750 | cgc Arg | acg Thr | cgc Pro | aac Asn | ggc Ala 5755 | acg Thr | ggc Ala | cgc Arg | gac Asp | gtg Val 5760 | ggc Ala | ggc Ala | ggc Ala | acg Thr | 57004 |
| ctg Leu 5765 | ccc Pro | ggc Ala | atc Ile | gtc Val | ggc Gly 5770 | gag Glu | tgg Trp | ggc Ala | cgc Arg | acc Thr 5775 | acg Thr | ccc Pro | ggc Gly | ggc Ala | 57049 |
| acc Thr 5780 | ggc Ala | gtc Val | acc Thr | ggc Ala | gag Glu 5785 | aac Asn | gac Asp | cgc Arg | ctc Leu | acc Thr 5790 | tac Tyr | ggc Ala | gag Glu | ctg Leu | 57094 |
| gac Asp 5795 | gct Ala | cgc Arg | ggc Ala | aac Asn | cgc Arg 5800 | ctg Leu | ggc Ala | cgc Arg | tcg Ser | ctg Leu 5805 | atc Ile | ggc Ala | cgc Arg | ggg Gly | 57139 |
| gtc Val 5810 | ggg Gly | ccc Pro | ggg Gly | ggc Ala | gtc Val 5815 | gtc Val | ggc Gly | atg Met | ctc Leu | ctg Leu 5820 | ccc Pro | cgc Arg | tcg Ser | cgc Pro | 57184 |
| ggc Gly 5825 | ctg Leu | gtg Val | gtg Val | ggc Ala | atg Met 5830 | ctg Leu | ggc Ala | atc Ile | gtc Val | aag Lys 5835 | ggc Ala | ggc Gly | ggc Gly | ggc Ala | 57229 |
| tac Tyr 5840 | ctg Leu | cgc Pro | ctc Leu | gat Asp | ccc Pro 5845 | ggc Gly | tat Tyr | cgc Pro | ggc Ala | ccc Pro 5850 | cgc Arg | ctg Leu | ggc Ala | cgc Arg | 57274 |
| atg Met 5855 | gtc Val | gag Glu | gac Asp | ggc Ala | ggc Ala 5860 | cgc Pro | ggc Ala | ctg Leu | ctg Leu | ctg Leu 5865 | ggc Ala | acg Thr | ggc Ala | ggc Gly | 57319 |
| acc | ggc | gac | ggc | gtg | ccc | ggc | ggg | cgc | cag | cga | ctg | ctg | ctg | gac | 57364 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Thr 5870 | Ala | Asp | Ala | Val | Pro 5875 | Ala | Gly | Pro | Gln | Arg 5880 | Leu | Leu | Leu | Asp | |
| gac Asp 5885 | ccc Pro | ggc Gly | acc Thr | gcg Ala | gcg Ala 5890 | gag Glu | ctg Leu | gcc Ala | cgg Arg | ctg Leu 5895 | gac Asp | ggc Gly | gac Asp | cgc Pro | 57409 |
| atc Ile 5900 | cgc Arg | gac Asp | gag Glu | gag Glu | cgc Arg 5905 | acc Thr | cac His | ccg Pro | ctg Leu | cgc Arg 5910 | ccc Pro | ggg Gly | cac His | ccg Pro | 57454 |
| gcg Ala 5915 | tac Tyr | ctg Leu | atg Met | ttc Phe | acc Thr 5920 | tcc Ser | gga Gly | tcg Ser | acg Thr | gga Gly 5925 | cgc Arg | ccg Pro | aag Lys | ggc Gly | 57499 |
| gtg Val 5930 | ctg Leu | gtg Val | ccg Pro | cac His | gcc Ala 5935 | ggc Gly | atc Ile | gac Asp | cgc Arg | atg Met 5940 | gtc Val | cgc Arg | cgc Arg | tcc Ser | 57544 |
| acc Thr 5945 | tgc Cys | ctt Leu | cag Gln | ctg Leu | gca Ala 5950 | ccg Pro | gac Asp | gac Asp | gtc Val | ctg Leu 5955 | ccg Pro | cac His | ctc Leu | tgc Ser | 57589 |
| tcg Ser 5960 | gtg Val | tcg Ser | ttc Phe | gac Asp | gcg Ala 5965 | gcc Ala | acc Thr | ttc Phe | gag Glu | atc Ile 5970 | tgg Trp | ggc Gly | gcg Ala | ctg Leu | 57634 |
| ctc Leu 5975 | aac Asn | ggc Gly | gcc Ala | acc Thr | ctc Leu 5980 | gcc Ala | gtc Val | gca Ala | ccg Pro | gcg Ala 5985 | gag Glu | acg Thr | ctc Leu | tgc Ser | 57679 |
| gtg Val 5990 | gcc Ala | gag Glu | ctg Leu | cgg Arg | gcc Ala 5995 | ttc Phe | ctc Leu | gcg Ala | gac Asp | cgg Arg 6000 | ggc Gly | gcc Ala | acc Thr | aag Lys | 57724 |
| ctg Leu 6005 | ttc Phe | ctc Leu | acc Thr | acc Thr | ggc Gly 6010 | ctg Leu | ctg Leu | cac His | gag Glu | gtg Val 6015 | atc Ile | gac Asp | gcc Ala | gac Asp | 57769 |
| gtg Val 6020 | acc Thr | gcc Ala | ctc Leu | gcc Ala | ggc Gly 6025 | ctg Leu | aag Lys | gcg Ala | gtc Val | tac Tyr 6030 | acc Thr | ggc Gly | ggt Gly | gac Asp | 57814 |
| gtg Val 6035 | ctc Leu | tcc Ser | ccg Pro | gcg Ala | cac His 6040 | tgc Cys | cgg Arg | tcg Ser | ctt Leu | ctc Leu 6045 | gac Asp | cgg Arg | gtg Val | ccc Pro | 57859 |
| ggc Gly 6050 | ctc Leu | gag Glu | ctc Leu | tac Tyr | aac Asn 6055 | gcc Ala | tac Tyr | ggc Gly | ccg Pro | acc Thr 6060 | gag Glu | aac Asn | acc Thr | acc Thr | 57904 |
| atc Ile 6065 | acc Thr | acc Thr | ctt Leu | cat His | cgc Arg 6070 | gta Val | cgc Arg | ccg Pro | gag Glu | gac Asp 6075 | ctc Leu | gac Asp | gcg Ala | ggc Gly | 57949 |
| acg Thr 6080 | ggc Gly | gta Val | ccg Pro | atc Ile | ggc Gly 6085 | gtg Val | ccc Pro | atc Ile | tcc Ser | gac Asp 6090 | acc Thr | cgg Arg | gtg Val | tac Tyr | 57994 |
| gtg Val 6095 | ctc Leu | gac Asp | gac Asp | gcg Ala | ctg Leu 6100 | cgg Arg | ccg Pro | gtg Val | ccc Pro | gtg Val 6105 | ggg Gly | gtc Val | gcc Ala | ggt Gly | 58039 |
| gag | ctc | tac | acc | tcc | ggc | atc | ggg | ctg | gcg | cac | ggc | tac | gcc | gga | 58084 |

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|-------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Glu 6110 | Leu | Tyr | Thr | Ser | Gly 6115 | Ile | Gly | Leu | Ala | His 6120 | Gly | Tyr | Ala | Gly | |
| cga 6125 | ccg Pro | gcg Ala | ccg Pro | acc Thr | gcg Ala 6130 | gag Glu | cgc Arg | ttc Phe | gtg Val | gcg Ala 6135 | tgc Cys | ccg Pro | ttc Phe | gca Ala | 58129 |
| ccc 6140 | ggt Gly | gag Glu | cgg Arg | atg Met | tac Tyr 6145 | cgc Arg | acc Thr | ggc Gly | gac Asp | ctg Leu 6150 | gtg Val | cgc Arg | tgg Trp | acc Thr | 58174 |
| gcc 6155 | gac Asp | ggg Gly | cgc Arg | ctg Leu | ctg Leu 6160 | ttc Phe | gcc Ala | ggc Gly | cgc Arg | gcc Ala 6165 | gac Asp | aac Asn | cag Gln | gtc Val | 58219 |
| aag 6170 | atc Ile | cgg Arg | ggc Gly | ttc Phe | cgg Arg 6175 | gtg Val | gag Glu | ccg Pro | ggc Gly | gag Glu 6180 | ctc Leu | gag Glu | acg Thr | gtc Val | 58264 |
| ctg 6185 | tcc Ser | gga Gly | cat His | ccg Pro | gcc Ala 6190 | gtg Val | gca Ala | cgg Arg | gcc Ala | gcg Ala 6195 | gtg Val | ctg Leu | gcg Ala | cgc Arg | 58309 |
| gag 6200 | gac Asp | acg Thr | ccc Pro | ggc Gly | gcc Ala 6205 | aag Lys | cgg Arg | ctg Leu | gtc Val | gca Ala 6210 | tac Tyr | gtc Val | gtg Val | ccg Pro | 58354 |
| gcc 6215 | cgg Arg | ccg Pro | gac Asp | gag Glu | gac Asp 6220 | ggg Gly | gac Asp | gcg Ala | ctg Leu | gcc Ala 6225 | gag Glu | tcc Ser | gtg Val | cgc Arg | 58399 |
| gcc 6230 | tac Tyr | gcc Ala | gcc Ala | cgg Arg | cag Gln 6235 | gtg Val | ccc Pro | gac Asp | tat Tyr | ctg Leu 6240 | atg Met | ccc Pro | gcc Ala | gcg Ala | 58444 |
| acg 6245 | gtg Val | gtg Val | ctc Leu | ccg Pro | gac Asp 6250 | ctg Leu | ccg Pro | ttg Leu | acc Thr | agc Ser 6255 | agc Ser | ggc Gly | aag Lys | gtc Val | 58489 |
| gac 6260 | cgg Arg | gcc Ala | gcg Ala | ctg Leu | ccg Pro 6265 | gcg Ala | ccg Pro | gac Asp | gtg Val | ccg Pro 6270 | ggc Gly | ggg Gly | ccg Pro | ggc Gly | 58534 |
| cgc 6275 | gcc Ala | gcc Ala | ggc Gly | acg Thr | ctc Leu 6280 | acc Thr | gag Glu | gag Glu | atc Ile | ctc Leu 6285 | tgc Cys | ggc Gly | gtc Val | ttc Phe | 58579 |
| gcc 6290 | cag Gln | gtg Val | ctc Leu | ggg Gly | ctg Leu 6295 | ccc Pro | acg Thr | gtc Val | ggc Gly | gtc Val 6300 | gac Asp | gac Asp | gac Asp | ttc Phe | 58624 |
| ttc 6305 | gcc Ala | agc Ser | ggc Gly | ggc Gly | cat His 6310 | tcg Ser | ctg Leu | ctg Leu | gcc Ala | acc Thr 6315 | cgg Arg | ctg Leu | gtc Val | agc Ser | 58669 |
| cgg 6320 | ctg Leu | cgt Arg | gcc Ala | gtc Val | ttc Phe 6325 | ggg Gly | gcc Ala | gag Glu | ctg Leu | ccg Pro 6330 | atc Ile | cgg Arg | gcc Ala | gtc Val | 58714 |
| ttc 6335 | gag Glu | gcg Ala | ccg Pro | acg Thr | ccg Pro 6340 | gcc Ala | acg Thr | ctg Leu | gcc Ala | acc Thr 6345 | cgg Arg | ctc Leu | ggc Gly | gca Ala | 58759 |
| tcc | gcg | ccg | cgg | cga | ctc | gcg | ctc | ggc | gaa | cgc | gcc | cgg | ccg | gag | 58804 |

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|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------|
| Ser 6350 | Ala | Pro | Arg | Arg | Leu 6355 | Ala | Leu | Gly | Glu | Arg 6360 | Ala | Arg | Pro | Glu | |
| aac 6365 | gtg | ccc | ctg | tgc | tac | gcc | cag | cgg | cgg | ctg | tgg | ttc | ctc | gac | 58849 |
| Asn 6365 | Val | Pro | Leu | Ser | Tyr 6370 | Ala | Gln | Arg | Arg | Leu 6375 | Trp | Phe | Leu | Asp | |
| cgc 6380 | ctg | gag | gga | cag | gac | ggc | acc | tac | acc | atc | ccg | ctc | acc | gtg | 58894 |
| Arg 6380 | Leu | Glu | Gly | Gln | Asp 6385 | Gly | Thr | Tyr | Thr | Ile 6390 | Pro | Leu | Thr | Val | |
| cgg 6395 | ctc | gac | ggg | cgg | gtc | gac | cgg | gcg | gcg | ctc | gcc | gcg | gcc | ctg | 58939 |
| Arg 6395 | Leu | Asp | Gly | Pro | Val 6400 | Asp | Arg | Ala | Ala | Leu 6405 | Ala | Ala | Ala | Leu | |
| cgc 6410 | gac | gtc | ctg | gag | cgc | cac | gag | gtg | ctg | cgg | acc | gtc | ttc | ccg | 58984 |
| Arg 6410 | Asp | Val | Leu | Glu | Arg 6415 | His | Glu | Val | Leu | Arg 6420 | Thr | Val | Phe | Pro | |
| ctc 6425 | gtg | gac | ggc | gaa | ccc | gtc | cag | cgg | gtg | ctg | ccg | gtg | cac | gac | 59029 |
| Leu 6425 | Val | Asp | Gly | Glu | Pro 6430 | Val | Gln | Arg | Val | Leu 6435 | Pro | Val | His | Asp | |
| acc 6440 | ggc | ttc | acg | ctc | ggc | ggc | ggt | gac | gtc | gcg | gcc | gcc | gac | ctc | 59074 |
| Thr 6440 | Gly | Phe | Thr | Leu | Gly 6445 | Gly | Gly | Asp | Val | Ala 6450 | Ala | Ala | Asp | Leu | |
| ggc 6455 | gcc | gcg | gtc | gcc | gag | gcc | acg | gcc | ggc | acc | ttc | gat | ctg | gcc | 59119 |
| Gly 6455 | Ala | Ala | Val | Ala | Glu 6460 | Ala | Thr | Ala | Gly | Thr 6465 | Phe | Asp | Leu | Ala | |
| gcc 6470 | gag | atc | ccg | gtg | cgc | gcc | tgg | ctg | ttc | cgc | gcc | ggg | ccc | gag | 59164 |
| Ala 6470 | Glu | Ile | Pro | Val | Arg 6475 | Ala | Trp | Leu | Phe | Arg 6480 | Ala | Gly | Pro | Glu | |
| gac 6485 | cac | acc | ctc | gtg | ctg | ctg | gtg | cac | cac | gtc | gcc | ggc | gac | ggc | 59209 |
| Asp 6485 | His | Thr | Leu | Val | Leu 6490 | Leu | Val | His | His | Val 6495 | Ala | Gly | Asp | Gly | |
| tgg 6500 | tgc | atg | acg | ccg | ctg | gcc | cgc | gac | atc | gcc | acc | gcc | tac | gac | 59254 |
| Trp 6500 | Ser | Met | Thr | Pro | Leu 6505 | Ala | Arg | Asp | Ile | Ala 6510 | Thr | Ala | Tyr | Asp | |
| agc 6515 | cgc | cgc | gag | agc | cgg | gcg | ccg | caa | tgg | gag | ccg | ctg | ccc | gtg | 59299 |
| Ser 6515 | Arg | Arg | Glu | Ser | Arg 6520 | Ala | Pro | Gln | Trp | Glu 6525 | Pro | Leu | Pro | Val | |
| cag 6530 | tac | gcc | gac | tac | gcg | ctc | tgg | cag | cgc | gaa | ctg | ctc | ggc | gcc | 59344 |
| Gln 6530 | Tyr | Ala | Asp | Tyr | Ala 6535 | Leu | Trp | Gln | Arg | Glu 6540 | Leu | Leu | Gly | Ala | |
| gag 6545 | gac | gat | ccg | gag | agt | ttg | ctg | tgc | cgg | cag | ctg | gcc | tac | tgg | 59389 |
| Glu 6545 | Asp | Asp | Pro | Glu | Ser 6550 | Leu | Leu | Ser | Arg | Gln 6555 | Leu | Ala | Tyr | Trp | |
| cgg 6560 | gac | gcg | ctc | gac | ggc | gta | ccg | gag | gag | ctg | gac | ctc | ccg | gcc | 59434 |
| Arg 6560 | Asp | Ala | Leu | Asp | Gly 6565 | Val | Pro | Glu | Glu | Leu 6570 | Asp | Leu | Pro | Ala | |
| gac 6575 | cgg | ccg | cgc | ccg | gcc | gag | gcc | acg | cac | cgg | gga | cac | gag | gtg | 59479 |
| Asp 6575 | Arg | Pro | Arg | Pro | Ala 6580 | Glu | Ala | Thr | His | Arg 6585 | Gly | His | Glu | Val | |
| ccc | gtg | cgg | gtg | ccg | gcc | gag | gtg | cac | cgg | cgc | ctg | gcc | gag | ctg | 59524 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Pro 6590 | Val | Arg | Val | Pro | Ala 6595 | Glu | Val | His | Arg | Arg 6600 | Leu | Ala | Glu | Leu | |
| gcc Ala 6605 | cgg Arg | tcc Ser | gag Glu | ggc Gly | gtg Val 6610 | acc Thr | gtg Val | ttc Phe | atg Met | gtg Val 6615 | ctg Leu | cag Gln | gcc Ala | gcc Ala | 59569 |
| ttc Phe 6620 | ggc Gly | acg Thr | ctg Leu | ctg Leu | tcc Ser 6625 | cgc Arg | ctc Leu | ggc Gly | gcc Ala | ggc Gly 6630 | gcc Ala | gac Asp | atc Ile | ccg Pro | 59614 |
| atc Ile 6635 | ggc Gly | acg Thr | gcg Ala | gtc Val | gcc Ala 6640 | ggc Gly | cgc Arg | acc Thr | gac Asp | cag Gln 6645 | gcc Ala | ctc Leu | gac Asp | gag Glu | 59659 |
| ctc Leu 6650 | gtc Val | ggg Gly | ttc Phe | ttc Phe | gtc Val 6655 | aac Asn | acg Thr | ctg Leu | gtg Val | atc Ile 6660 | cgg Arg | gcc Ala | gac Asp | ctg Leu | 59704 |
| tcc Ser 6665 | ggc Gly | gac Asp | ccc Pro | acc Thr | ttc Phe 6670 | cgg Arg | gag Glu | ctg Leu | ctc Leu | ggc Gly 6675 | cgg Arg | gtg Val | cgc Arg | gcc Ala | 59749 |
| acc Thr 6680 | ggc Gly | ctg Leu | tcc Ser | gcc Ala | tac Tyr 6685 | gag Glu | cac His | cag Gln | gac Asp | gtc Val 6690 | ccg Pro | ttc Phe | gag Glu | cgg Arg | 59794 |
| ctc Leu 6695 | gtc Val | gag Glu | gtg Val | ctg Leu | gca Ala 6700 | ccg Pro | gcc Ala | cga Arg | tcg Ser | ctc Leu 6705 | gcc Ala | cgg Arg | cac His | ccg Pro | 59839 |
| ctc Leu 6710 | ttc Phe | cag Gln | gtc Val | atg Met | ctc Leu 6715 | acg Thr | ctg Leu | cag Gln | aac Asn | acc Thr 6720 | ggc Gly | cgc Arg | gcg Ala | gac Asp | 59884 |
| gcc Ala 6725 | ggc Gly | gac Asp | cag Gln | gcc Ala | gtc Val 6730 | ccg Pro | ccg Pro | gcc Ala | gcc Ala | gga Gly 6735 | tcg Ser | gcc Ala | gcg Ala | gcc Ala | 59929 |
| aag Lys 6740 | ttc Phe | gac Asp | ctc Leu | gag Glu | atc Ile 6745 | agc Ser | atc Ile | gcg Ala | gag Glu | acg Thr 6750 | ttc Phe | gcc Ala | gcc Ala | gat Asp | 59974 |
| ggc Gly 6755 | gag Glu | ccg Pro | gcc Ala | ggg Gly | ctc Leu 6760 | agc Ser | ggc Gly | gtt Val | ctc Leu | atc Ile 6765 | gcc Ala | gcc Ala | gcc Ala | gac Asp | 60019 |
| ctg Leu 6770 | ttc Phe | gag Glu | ccg Pro | gcc Ala | acc Thr 6775 | gcg Ala | gcc Ala | gcg Ala | ttc Phe | gcc Ala 6780 | gaa Glu | cgg Arg | ctg Leu | gcc Ala | 60064 |
| cgc Arg 6785 | gtg Val | ctg Leu | gcc Ala | gcg Ala | gcc Ala 6790 | ggc Gly | gcc Ala | gat Asp | ccg Pro | cgg Arg 6795 | ctg Leu | cgg Arg | gtc Val | agc Ser | 60109 |
| cag Gln 6800 | gtc Val | gac Asp | atc Ile | ctc Leu | agc Ser 6805 | gcc Ala | gag Glu | gag Glu | cgc Arg | gag Glu 6810 | gcc Ala | gtc Val | ctg Leu | tcc Ser | 60154 |
| ggc Gly 6815 | ggc Gly | aac Asn | ggc Gly | ggc Gly | acc Thr 6820 | gcg Ala | ccg Pro | gtt Val | ccc Pro | gtc Val 6825 | acc Thr | acc Thr | gtc Val | ccg Pro | 60199 |
| gcg | ctc | ttc | gcc | gag | cag | gcc | cgc | cgg | acc | ccg | ggc | gcg | gtg | gcg | 60244 |

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|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------|
| Ala 6830 | Leu | Phe | Ala | Glu | Gln 6835 | Ala | Arg | Arg | Thr | Pro 6840 | Gly | Ala | Val | Ala | |
| gcg 6845 | ctg | agc | gag | ggg | atg 6850 | tcg | ctc | acc | tac | gcc 6855 | gat | ctc | gcc | gcc | 60289 |
| Ala 6845 | Leu | Ser | Glu | Gly | Met 6850 | Ser | Leu | Thr | Tyr | Ala 6855 | Asp | Leu | Ala | Ala | |
| cgc 6860 | gtg | aac | cgg | ctc | gcc 6865 | cgg | cac | ctg | gtg | agc 6870 | ctc | ggc | gcc | gga | 60334 |
| Arg 6860 | Val | Asn | Arg | Leu | Ala 6865 | Arg | His | Leu | Val | Ser 6870 | Leu | Gly | Ala | Gly | |
| ccg 6875 | gag | acc | gtc | gtc | ggg 6880 | atc | gcc | atg | agc | cgc 6885 | ggc | ctc | gac | atg | 60379 |
| Pro 6875 | Glu | Thr | Val | Val | Gly 6880 | Ile | Ala | Met | Ser | Arg 6885 | Gly | Leu | Asp | Met | |
| ctg 6890 | gtg | gcg | gtc | ctc | gcg 6895 | gtc | ggg | cag | gcc | ggc 6900 | gcc | gcc | tac | ctg | 60424 |
| Leu 6890 | Val | Ala | Val | Leu | Ala 6895 | Val | Gly | Gln | Ala | Gly 6900 | Ala | Ala | Tyr | Leu | |
| ccc 6905 | gtc | gac | cgg | tcc | tac 6910 | cgg | gac | gag | cgc | aag 6915 | gag | ttc | atg | ctc | 60469 |
| Pro 6905 | Val | Asp | Pro | Ser | Tyr 6910 | Pro | Asp | Glu | Arg | Lys 6915 | Glu | Phe | Met | Leu | |
| acc 6920 | gac | gcc | ggc | gcc | gcg 6925 | tat | gtg | ctc | acc | ttg 6930 | gcc | tcg | gac | gcc | 60514 |
| Thr 6920 | Asp | Ala | Gly | Ala | Ala 6925 | Tyr | Val | Leu | Thr | Leu 6930 | Ala | Ser | Asp | Ala | |
| gac 6935 | cgc | gtg | cgg | cgg | gga 6940 | acc | cgg | gcc | gcc | gcc 6945 | gtg | gtc | ctg | gac | 60559 |
| Asp 6935 | Arg | Val | Pro | Pro | Gly 6940 | Thr | Pro | Ala | Ala | Ala 6945 | Val | Val | Leu | Asp | |
| gag 6950 | ccc | gtg | acg | gcc | gcg 6955 | cgg | atc | gcc | ggg | ctc 6960 | gat | cgg | gcc | gac | 60604 |
| Glu 6950 | Pro | Val | Thr | Ala | Ala 6955 | Arg | Ile | Ala | Gly | Leu 6960 | Asp | Pro | Ala | Asp | |
| ctg 6965 | acc | gac | gcc | gac | cgg 6970 | gtg | gcg | cgg | ctg | ctg 6975 | cgg | gcc | cac | cgg | 60649 |
| Leu 6965 | Thr | Asp | Ala | Asp | Arg 6970 | Val | Ala | Pro | Leu | Leu 6975 | Pro | Ala | His | Arg | |
| gcg 6980 | tac | gtc | atc | tac | acc 6985 | tcc | gga | tcc | acc | ggc 6990 | cgg | ccc | aag | ggg | 60694 |
| Ala 6980 | Tyr | Val | Ile | Tyr | Thr 6985 | Ser | Gly | Ser | Thr | Gly 6990 | Arg | Pro | Lys | Gly | |
| gtc 6995 | gcc | gtc | gag | cac | cgc 7000 | acc | gtg | gtc | aac | ctg 7005 | ctg | tcc | tgg | gcg | 60739 |
| Val 6995 | Ala | Val | Glu | His | Arg 7000 | Thr | Val | Val | Asn | Leu 7005 | Leu | Ser | Trp | Ala | |
| gcc 7010 | ggg | cgg | ttc | ggc | ggc 7015 | gcc | gac | ttc | gcc | cgg 7020 | acg | ctc | gcc | gcc | 60784 |
| Ala 7010 | Gly | Arg | Phe | Gly | Gly 7015 | Ala | Asp | Phe | Ala | Arg 7020 | Thr | Leu | Ala | Ala | |
| acc 7025 | tcg | ctc | aac | ttc | gac 7030 | gtc | tcg | gtc | ttc | gag 7035 | atc | ttc | ggg | cgg | 60829 |
| Thr 7025 | Ser | Leu | Asn | Phe | Asp 7030 | Val | Ser | Val | Phe | Glu 7035 | Ile | Phe | Gly | Pro | |
| ctg 7040 | gtg | tcc | ggc | ggc | agc 7045 | atc | gag | atc | gtc | acc 7050 | gac | ctg | ctc | gcc | 60874 |
| Leu 7040 | Val | Ser | Gly | Gly | Ser 7045 | Ile | Glu | Ile | Val | Thr 7050 | Asp | Leu | Leu | Ala | |
| ctg 7055 | gcc | gac | cgg | gcc | tcc 7060 | cgg | gcc | tgg | gag | gcc 7065 | agc | ctg | gtc | agc | 60919 |
| Leu 7055 | Ala | Asp | Pro | Ala | Ser 7060 | Pro | Ala | Trp | Glu | Ala 7065 | Ser | Leu | Val | Ser | |
| ggc | gtg | cgg | tcg | gcg | ttc | tcg | cgg | gtc | ctc | gac | cgg | ggc | gac | atc | 60964 |

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| | | | | | | | | | | | | | | | |
|-------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Gly 7070 | Val | Pro | Ser | Ala | Phe 7075 | Ser | Arg | Val | Leu | Asp 7080 | Arg | Gly | Asp | Ile | |
| gcc 7085 | gcg Ala | cgc Arg | acc Thr | cgc Arg | agc Ser 7090 | gtg Val | gtg Val | ctg Leu | gcc Ala | ggc Gly 7095 | gag Glu | gcg Ala | ctg Leu | acc Thr | 61009 |
| gcc 7100 | gac Asp | gtg Val | gtg Val | aac Asn | gcc Ala 7105 | acc Thr | cgt Arg | gcc Ala | gcc Ala | ctg Leu 7110 | ccc Pro | ggt Gly | gtc Val | cgg Arg | 61054 |
| gtg 7115 | gcc Ala | aac Asn | atc Ile | tac Tyr | ggg Gly 7120 | cgc Pro | acc Thr | gag Glu | gcg Ala | acc Thr 7125 | gtc Val | tac Tyr | tgc Ser | acc Thr | 61099 |
| gcc 7130 | tgg Trp | cac His | acc Thr | gac Asp | cgg Arg 7135 | gac Asp | gtg Val | acc Thr | ggc Gly | ggc Gly 7140 | gcc Ala | gcg Ala | cgc Pro | atc Ile | 61144 |
| ggg 7145 | cgc Arg | ccg Pro | gtc Val | acc Thr | aac Asn 7150 | acc Thr | cgc Arg | gcc Ala | tac Tyr | gtc Val 7155 | ctc Leu | gac Asp | gac Asp | cgt Arg | 61189 |
| ctc 7160 | acg Thr | ccg Pro | gtg Val | ccg Pro | ccg Pro 7165 | ggc Gly | gtg Val | gtg Val | ggc Gly | gag Glu 7170 | ctc Leu | tac Tyr | ctg Leu | gcc Ala | 61234 |
| ggc 7175 | gcc Ala | cag Gln | ctg Leu | gcc Ala | cgc Arg 7180 | ggc Gly | tat Tyr | ctg Leu | ggc Gly | cgc Arg 7185 | ccc Pro | ggc Gly | ctg Leu | acc Thr | 61279 |
| ggc 7190 | gag Glu | cgc Arg | ttc Phe | gtg Val | gcc Ala 7195 | tgc Cys | ccg Pro | ttc Phe | ggc Gly | ccg Pro 7200 | ggc Gly | ggg Gly | gag Glu | cgc Arg | 61324 |
| atg 7205 | tac Met | cgc Arg | acc Thr | ggc Gly | gac Asp 7210 | cgc Arg | gtc Val | cgc Arg | tgg Trp | aac Asn 7215 | gcc Ala | gac Asp | ggc Gly | gac Asp | 61369 |
| ctg 7220 | gtc Val | ttc Phe | gcc Ala | ggc Gly | cgc Arg 7225 | gcc Ala | gac Asp | gac Asp | cag Gln | gtc Val 7230 | aag Lys | atc Ile | cgc Arg | ggc Gly | 61414 |
| ttc 7235 | cgt Arg | atc Ile | gag Glu | ccg Pro | ggc Gly 7240 | gag Glu | gtg Val | cag Gln | gcc Ala | gtc Val 7245 | gtg Val | gcg Ala | cgc Arg | cag Gln | 61459 |
| gcc 7250 | ggc Ala | gtg Val | gcc Ala | cgc Arg | ggc Ala 7255 | gtg Val | gtg Val | ctg Leu | gcc Ala | cgc Arg 7260 | agc Ser | gac Asp | tgc Ser | ccc Pro | 61504 |
| ggc 7265 | gac Asp | gcc Ala | cgc Arg | ctg Leu | gtc Val 7270 | gcg Ala | tac Tyr | gtc Val | gtg Val | ccg Pro 7275 | gcc Ala | gac Asp | cgc Arg | gac Asp | 61549 |
| gcc 7280 | gac Asp | cgc Arg | cgc Arg | ggc Ala | ctg Leu 7285 | gcc Ala | gcc Ala | acc Thr | gtc Val | cgc Arg 7290 | tgc Ser | gac Asp | acc Thr | gcg Ala | 61594 |
| cgc 7295 | gag Glu | ctg Leu | ccg Pro | ggc Ala | tac Tyr 7300 | ctg Leu | gtg Val | ccg Pro | ggc Ala | gcc Ala 7305 | gtg Val | gtg Val | gtc Val | ctc Leu | 61639 |
| gac | gag | ctg | ccc | gtc | acg | gcc | aac | ggc | aag | ctc | gat | cgc | cgt | gcg | 61684 |

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|-------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Asp 7310 | Glu | Leu | Pro | Val | Thr 7315 | Ala | Asn | Gly | Lys | Leu 7320 | Asp | Arg | Arg | Ala | |
| ctg 7325 | ccc Pro | gcg Ala | ccc Pro | ggc Gly | ctg Leu 7330 | gcc Ala | gag Glu | gcg Ala | ggc Gly | agc Ser 7335 | ggc Gly | cgc Arg | ggg Gly | ccg Pro | 61729 |
| gtc 7340 | acc Thr | cac His | cgc Arg | gag Glu | gag Glu 7345 | gtg Val | ctc Leu | tgc Cys | gag Glu | gtc Val 7350 | ttc Phe | gcc Ala | cag Gln | gtg Val | 61774 |
| ctc 7355 | ggc Gly | ctg Leu | ccc Pro | tgc Ser | gtc Val 7360 | ggc Gly | gtg Val | gac Asp | gac Asp | gac Asp 7365 | ttc Phe | ttc Phe | gcg Ala | ctc Leu | 61819 |
| ggc 7370 | ggg Gly | cac His | tcc Ser | ctg Leu | ctg Leu 7375 | gcc Ala | gtc Val | tgc Ser | ctg Leu | gtg Val 7380 | gag Glu | cag Gln | ctg Leu | cgc Arg | 61864 |
| cgc 7385 | cgc Arg | ggc Gly | gtg Val | acg Thr | gtc Val 7390 | ggg Gly | gtg Val | cgc Arg | gcg Ala | ctc Leu 7395 | ttc Phe | cag Gln | acg Thr | ccc Pro | 61909 |
| acg 7400 | gtc Val | gcc Ala | ggc Gly | ctg Leu | gcc Ala 7405 | gag Glu | gcg Ala | gcc Ala | gcg Ala | ccc Pro 7410 | acc Thr | acg Thr | gtc Val | gcc Ala | 61954 |
| gtt 7415 | ccg Pro | ccc Pro | aac Asn | ctc Leu | atc Ile 7420 | ccc Pro | gag Glu | gac Asp | gcg Ala | cgg Arg 7425 | cac His | atc Ile | acg Thr | ccc Pro | 61999 |
| ggc 7430 | ctg Leu | ctg Leu | ccg Pro | ctc Leu | gtg Val 7435 | gag Glu | ctg Leu | gag Glu | cag Gln | gcc Ala 7440 | gag Glu | atc Ile | gac Asp | cag Gln | 62044 |
| gtc 7445 | gtg Val | gcc Ala | act Thr | gtg Val | gac Asp 7450 | ggc Gly | ggc Gly | gcc Ala | gcc Ala | aac Asn 7455 | gtg Val | gcc Ala | gac Asp | atc Ile | 62089 |
| tat 7460 | ccg Pro | ctc Leu | gcg Ala | ccg Pro | ctc Leu 7465 | cag Gln | cag Gln | ggc Gly | atg Met | ctc Leu 7470 | ttc Phe | cac His | cac His | ctc Leu | 62134 |
| atg 7475 | gcc Ala | ggc Gly | gac Asp | gac Asp | ggc Gly 7480 | gag Glu | gac Asp | gtc Val | tac Tyr | atc Ile 7485 | atg Met | ccc Pro | gcg Ala | gtc Val | 62179 |
| gtg 7490 | gag Val | ttc Glu | gac Phe | tgc Ser | gcg Ala 7495 | gac Asp | cgc Arg | ttc Phe | ggc Gly | gcc Ala 7500 | ttc Phe | gtc Val | gac Asp | gcc Ala | 62224 |
| ctc 7505 | cag Leu | cac Gln | gtg His | atc Val | gac Ile 7510 | cgc Arg | aac Asn | gac Asp | gtc Val | tac Tyr 7515 | cgc Arg | acc Thr | ggc Gly | gtg Val | 62269 |
| gtc 7520 | tgg Val | gac Trp | ggc Asp | ctg Gly | cgc Leu 7525 | gag Glu | ccg Pro | gtg Val | cag Gln | gtg Val 7530 | gtc Val | tgg Trp | cgc Arg | cgg Arg | 62314 |
| gcg 7535 | ccc Ala | ctg Pro | ccc Leu | gtg Pro | acc Val 7540 | gag Glu | gtg Val | acg Thr | ctc Leu | gat Asp 7545 | ccg Pro | gcc Ala | ggc Gly | ggc Gly | 62359 |
| gat | ccc | gcc | gcc | cag | ctg | cac | gcc | gcc | gcc | ggc | gcc | cgg | atg | gac | 62404 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Asp 7550 | Pro | Ala | Ala | Gln | Leu 7555 | His | Ala | Ala | Ala | Gly 7560 | Ala | Arg | Met | Asp | |
| ctg Leu 7565 | aac Asn | cgg Arg | gcg Ala | ccc Pro | ctg Leu 7570 | ctc Leu | gac Asp | ctc Leu | cac His | gtg Val 7575 | gcc Ala | gcc Ala | cgg Arg | ccc Pro | 62449 |
| gag Glu 7580 | gac Asp | ggc Gly | caa Gln | cgg Arg | ctg Leu 7585 | gcc Ala | ctg Leu | ctg Leu | cgg Arg | gtt Val 7590 | cac His | cac His | atg Met | gtg Val | 62494 |
| cag Gln 7595 | gac Asp | cac His | atg Met | ggg Gly | ctc Leu 7600 | gag Glu | gtg Val | ctc Leu | ctc Leu | ggc Gly 7605 | gag Glu | gtg Val | cag Gln | gcg Ala | 62539 |
| ttc Phe 7610 | ctg Leu | gcc Ala | ggc Gly | cgc Arg | ggc Gly 7615 | gac Asp | gag Glu | ctt Leu | ccc Pro | gat Asp 7620 | ccg Pro | ctg Leu | ccg Pro | ttc Phe | 62584 |
| cgc Arg 7625 | gac Asp | ttc Phe | gtg Val | gcg Ala | cag Gln 7630 | acc Thr | cgc Arg | ggc Gly | ggg Gly | gtg Val 7635 | ccg Pro | gag Glu | gcc Ala | gag Glu | 62629 |
| cac His 7640 | cgg Arg | cgg Arg | ttc Phe | ttc Phe | gcc Ala 7645 | ggg Gly | ctg Leu | ctg Leu | ggc Gly | gac Asp 7650 | gtc Val | acc Thr | gag Glu | ccc Pro | 62674 |
| acc Thr 7655 | gcg Ala | ccg Pro | tac Tyr | ggc Gly | ctg Leu 7660 | ctc Leu | gac Asp | gtg Val | cac His | cgc Arg 7665 | gac Asp | ggc Gly | gtc Val | ggc Gly | 62719 |
| ctg Leu 7670 | gtg Val | cgc Arg | cag Gln | gaa Glu | cgc Arg 7675 | ccg Pro | ctc Leu | gac Asp | ggg Gly | gag Glu 7680 | gtg Val | gtg Val | gcc Ala | cgg Arg | 62764 |
| ctc Leu 7685 | cgc Arg | gcc Ala | gtg Val | ggc Ala | cgc Arg 7690 | cgg Arg | ctc Leu | ggg Gly | gtg Val | agc Ser 7695 | ccg Pro | gcg Ala | acc Thr | gtc Val | 62809 |
| atg Met 7700 | cac His | gtc Val | gcc Ala | tgg Trp | gcg Ala 7705 | cgc Arg | gtg Val | ctc Leu | ggc Gly | gtg Val 7710 | atc Ile | tcc Ser | ggc Gly | cgc Arg | 62854 |
| gac Asp 7715 | gac Asp | gtg Val | gtc Val | ttc Phe | ggc Gly 7720 | acg Thr | ctg Leu | ctg Leu | ctg Leu | ggc Gly 7725 | cgg Arg | ttc Phe | agc Ser | acc Thr | 62899 |
| ggc Gly 7730 | gcc Ala | gac Asp | cgg Arg | gtg Val | ccc Pro 7735 | ggc Gly | ccg Pro | ttc Phe | atc Ile | aac Asn 7740 | acg Thr | ctt Leu | ccg Pro | gtg Val | 62944 |
| cgg Arg 7745 | gcc Ala | cgg Arg | ctc Leu | ggc Gly | ggc Gly 7750 | acg Thr | ggc Gly | gcc Ala | gcg Ala | gcg Ala 7755 | gcg Ala | gtg Val | gcg Ala | gag Glu | 62989 |
| atg Met 7760 | cgc Arg | cgg Arg | ctg Leu | ctg Leu | gcc Ala 7765 | gag Glu | ctg Leu | ctc Leu | gag Glu | cac His 7770 | gag Glu | cac His | gcg Ala | ccg Pro | 63034 |
| ctg Leu 7775 | acc Thr | acg Thr | gcg Ala | cag Gln | cag Gln 7780 | gcc Ala | agc Ser | gga Gly | ctc Leu | tcc Ser 7785 | gga Gly | aac Asn | ctc Leu | ccg Pro | 63079 |
| ctg | ttc | acg | gcg | ctg | ttc | aac | tat | cgg | cac | aac | acg | tcg | ccg | ggt | 63124 |

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|-------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Leu 7790 | Phe | Thr | Ala | Leu | Phe 7795 | Asn | Tyr | Arg | His | Asn 7800 | Thr | Ser | Pro | Gly | |
| gcg 7805 | gac Ala | ccg Asp | tcg Pro | ccc Ser | gcg Ala 7810 | gcc Ala | ggc Gly | ccg Pro | acc Thr | gag Glu 7815 | ggc Gly | atc Ile | cgc Arg | ccg Pro | 63169 |
| gtc 7820 | tcc Val | atg Ser | cgg Met | gag Arg | cgc Arg 7825 | acc Thr | aac Asn | tat Tyr | ccg Pro | atc Ile 7830 | tcg Ser | gtg Val | gcg Ala | gtg Val | 63214 |
| gac 7835 | gac Asp | gac Asp | ggc Gly | gag Glu | ggc Gly 7840 | ctc Leu | ggc Gly | gtg Val | gcg Ala | gtc Val 7845 | aac Asn | gcg Ala | atc Ile | ccg Pro | 63259 |
| ccg 7850 | gtg Val | cgg Arg | ccg Pro | gag Glu | gcg Ala 7855 | gtg Val | tgc Cys | gag Glu | ctc Leu | gtg Val 7860 | gcg Ala | acc Thr | gcg Ala | acc Thr | 63304 |
| gag 7865 | agc Glu | ctg Ser | acc Leu | tcg Thr | gcg Ala 7870 | ctg Leu | gag Glu | ctg Leu | ttc Phe | ctc Leu 7875 | gac Asp | ggc Gly | ggt Gly | ccg Pro | 63349 |
| gac 7880 | acc Thr | gcg Ala | gtc Val | ggc Gly | gag Glu 7885 | ctc Leu | gac Asp | gtg Val | ctg Leu | ccg Pro 7890 | ccg Pro | ggg Gly | gag Glu | cgg Arg | 63394 |
| tcg 7895 | cgg Ser | ctg Arg | ctg Leu | gtg Val | gag Glu 7900 | tgg Trp | aac Asn | gac Asp | acg Thr | gct Ala 7905 | cgt Arg | ccg Pro | gtg Val | gtg Val | 63439 |
| gag 7910 | tcg Glu | tcg Ser | gtg Ser | ccg Val | gcg Ala 7915 | ttg Leu | ttc Phe | gcc Ala | gag Glu | cgg Arg 7920 | gtg Val | gcg Ala | gcc Ala | gcg Ala | 63484 |
| ccg 7925 | gat Pro | gcg Asp | gtc Ala | gcg Val | gtg Val 7930 | gtg Val | ggc Gly | gag Glu | ggt Gly | gtg Val 7935 | tcg Ser | tgg Trp | tcc Ser | tat Tyr | 63529 |
| cgc 7940 | gag Arg | ctt Glu | gac Leu | cgt Asp | cgc Arg 7945 | tcg Ser | gat Asp | gtg Val | ctg Leu | gcg Ala 7950 | cgg Arg | agt Ser | ctg Leu | gtg Val | 63574 |
| gcg 7955 | gcg Ala | ggt Gly | gtg Val | ggc Gly | ctg Leu 7960 | gag Glu | tcg Ser | ccg Pro | gtg Val | gtg Val 7965 | gtg Val | gcc Ala | ctc Leu | gaa Glu | 63619 |
| cgg 7970 | tcc Arg | gcc Ser | gac Ala | gtg Asp | ctg Leu 7975 | acc Thr | gcg Ala | ttt Phe | ctc Leu | gcc Ala 7980 | gtc Val | gcg Ala | aag Lys | gcc Ala | 63664 |
| ggc 7985 | ggt Gly | gtc Val | ttc Phe | gtt Val | ccg Pro 7990 | gtg Val | gac Asp | ttg Leu | tcc Ser | tgg Trp 7995 | ccg Pro | cag Gln | acg Thr | cgt Arg | 63709 |
| atc 8000 | gat Ile | gcg Asp | gtg Ala | atc Ile | gcg Ala 8005 | gac Asp | agc Ser | cgg Arg | ccg Pro | gtt Val 8010 | ctg Leu | gtg Val | ttg Leu | gac Asp | 63754 |
| agc 8015 | gtg Ser | gat Val | ctg Asp | ccg Leu | gcc Pro 8020 | gcg Ala | gag Glu | gcc Ala | gac Asp | ctg Leu 8025 | ccg Pro | cgg Arg | gtg Val | ccg Pro | 63799 |
| gcc | ggt | gcg | ggc | gtg | tat | cgg | atg | tac | acc | tcg | ggt | tcc | acg | ggc | 63844 |

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|-------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Ala 8030 | Gly | Ala | Gly | Val | Tyr 8035 | Arg | Met | Tyr | Thr | Ser 8040 | Gly | Ser | Thr | Gly | |
| cgg 8045 | ccc Pro | aag Lys | ggg Gly | gtg Val | gtg 8050 | acc Thr | acc Thr | cac His | cag Gln | aat Asn 8055 | ctg Leu | gtg Val | gat Asp | ctg Leu | 63889 |
| gcg 8060 | acc Thr | gac Asp | acg Thr | tgt Cys | tgg Trp 8065 | gga Gly | tcg Ser | acg Thr | ccg Pro | cgg Arg 8070 | gtg Val | ttg Leu | ttc Phe | cac His | 63934 |
| gcc 8075 | ccg Pro | cac His | gcc Ala | ttc Phe | gac Asp 8080 | gcg Ala | tcg Ser | tcg Ser | tac Tyr | gaa Glu 8085 | atc Ile | tgg Trp | gtg Val | ccg Pro | 63979 |
| ttg 8090 | ttg Leu | aat Asn | ggc Gly | ggc Gly | acg Thr 8095 | gtc Val | gtg Val | gtg Val | gcc Ala | ccg Pro 8100 | cgg Arg | cgc Arg | agc Ser | atc Ile | 64024 |
| gac 8105 | gcc Ala | acc Thr | gtc Val | ctg Leu | agg Arg 8110 | gac Asp | ctg Leu | gtc Val | cgc Arg | ggg Gly 8115 | cat His | gag Glu | ttg Leu | acg Thr | 64069 |
| cac 8120 | gtg Val | cat His | gtg Val | acc Thr | gcg Ala 8125 | ggc Gly | ctg Leu | ttg Leu | cgg Arg | gtg Val 8130 | ctg Leu | gac Asp | ccg Pro | tcg Ser | 64114 |
| tgc 8135 | ttc Phe | gcg Ala | ggg Gly | ctg Leu | acc Thr 8140 | gag Glu | gtt Val | ttg Leu | acc Thr | ggc Gly 8145 | ggg Gly | gat Asp | gcc Ala | gtg Val | 64159 |
| tcg 8150 | gcg Ala | gag Glu | gcg Ala | gtg Val | cgc Arg 8155 | cgg Arg | gtc Val | aag Lys | gaa Glu | gcg Ala 8160 | aac Asn | ccg Pro | ggg Gly | ctg Leu | 64204 |
| cgg 8165 | gtg Val | cgc Arg | cag Gln | ttg Leu | tac Tyr 8170 | ggc Gly | ccg Pro | acc Thr | gag Glu | gtg Val 8175 | acc Thr | ttg Leu | tgc Cys | gcc Ala | 64249 |
| acg 8180 | cag Gln | cat His | ctg Leu | ctg Leu | gat Asp 8185 | gac Asp | ggg Gly | gtg Val | ccg Pro | atc Ile 8190 | ggg Gly | ccg Arg | ccg Pro | ttg Leu | 64294 |
| gac 8195 | aac Asn | acc Thr | cgc Arg | gtc Val | tac Tyr 8200 | gtt Val | ctc Leu | gac Asp | gac Asp | ctc Leu 8205 | ctg Leu | cgg Arg | ccg Pro | gtc Val | 64339 |
| ccg 8210 | acg Thr | ggg Gly | gtg Val | gtg Val | ggg Gly 8215 | gag Glu | ctg Leu | tat Tyr | gtg Val | gcc Ala 8220 | ggg Gly | tcg Ser | ggg Gly | ctg Leu | 64384 |
| gcg 8225 | cgt Arg | ggc Gly | tat Tyr | gcg Ala | ggc Gly 8230 | atg Met | ccg Pro | ggg Gly | ttg Leu | acg Thr 8235 | gcc Ala | gag Glu | cga Arg | ttt Phe | 64429 |
| gtc 8240 | gcc Val | gac Ala | ccg Asp | ttc Pro | tcg Ser 8245 | gtg Val | ggg Gly | ggg Gly | cgc Arg | ctc Leu 8250 | tac Tyr | cgc Arg | acc Thr | ggg Gly | 64474 |
| gat 8255 | ctg Leu | gtc Val | cgg Arg | tgg Trp | acc Thr 8260 | gac Asp | gac Asp | ggg Gly | gtg Val | ctg Leu 8265 | cac His | ttc Phe | gcc Ala | ggg Gly | 64519 |
| cgg | gcc | gat | gat | cag | gtg | aag | atc | cgc | ggc | tat | cgg | gtg | gag | ccg | 64564 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|-------|
| Arg 8270 | Ala | Asp | Asp | Gln | Val 8275 | Lys | Ile | Arg | Gly | Tyr 8280 | Arg | Val | Glu | Pro | |
| ggc Gly 8285 | gag Glu | gtt Val | gaa Glu | gcg Ala | gtt Val 8290 | ctg Leu | gct Ala | caa Gln | cac His | ccc Pro 8295 | gac Asp | gtc Val | agc Ser | cag Gln | 64609 |
| gtc Val 8300 | gcg Ala | gtc Val | gtc Val | gtc Val | cga Arg 8305 | gag Glu | gac Asp | gcg Ala | cca Pro | ggg Gly 8310 | gat Asp | aag Lys | cgg Arg | ctg Leu | 64654 |
| gtc Val 8315 | gcc Ala | tat Tyr | gtc Val | gtc Val | ggc Gly 8320 | ggg Gly | gat Asp | gtc Val | gag Glu | gcg Ala 8325 | tat Tyr | gcg Ala | cag Gln | gag Glu | 64699 |
| cgc Arg 8330 | ctt Leu | ccc Pro | ggc Gly | tac Tyr | atg Met 8335 | gtt Val | ccg Pro | tcg Ser | gcc Ala | ttc Phe 8340 | gtc Val | cat His | ctg Leu | gaa Glu | 64744 |
| gcg Ala 8345 | ctg Leu | ccg Pro | ctg Leu | acc Thr | gcg Ala 8350 | aac Asn | cag Gln | aag Lys | gtc Val | gac Asp 8355 | cgg Arg | gcc Ala | gcc Ala | ctg Leu | 64789 |
| ccc Pro 8360 | gcg Ala | ccc Pro | gag Glu | cgg Arg | gag Glu 8365 | acg Thr | acg Thr | aca Thr | ccg Pro | ggg Gly 8370 | aag Lys | gca Ala | ccc Pro | gcc Ala | 64834 |
| ccc Pro 8375 | gga Gly | ccg Pro | ctc Leu | ggc Gly | aac Asn 8380 | ctc Leu | gag Glu | gag Glu | tcg Ser | atg Met 8385 | tgc Cys | cag Gln | gag Ala | ttc Phe | 64879 |
| gcc Ala 8390 | gag Glu | gtg Val | ctc Leu | ggc Gly | ctc Leu 8395 | gac Asp | agc Ser | gtc Val | ggc Gly | ccg Pro 8400 | gac Asp | gac Asp | gac Asp | ttc Phe | 64924 |
| ttc Phe 8405 | gcc Ala | ctg Leu | ggc Gly | ggc Gly | cac His 8410 | tcg Ser | ctg Leu | ctc Leu | gcc Ala | gtc Val 8415 | gag Ala | ctc Leu | gtg Val | cag Gln | 64969 |
| cgg Arg 8420 | ctc Leu | aag Lys | gca Ala | cgc Arg | ggg Gly 8425 | gtc Val | gcc Ala | gtc Val | acg Thr | gtg Val 8430 | cag Gln | gac Asp | atc Ile | atg Met | 65014 |
| gcc Ala 8435 | gag Ala | ccc Pro | acg Thr | gtc Val | tcg Ser 8440 | gag Glu | ctg Leu | atg Met | ggc Gly | tcg Ser 8445 | ctg Leu | agc Ser | atg Met | tcg Ser | 65059 |
| tcg Ser 8450 | atc Ile | cgg Arg | gac Asp | tcc Ser | ctc Leu 8455 | ggc Gly | acg Thr | ctc Leu | ctg Leu | ccg Pro 8460 | atc Ile | cgg Arg | cgc Arg | acc Thr | 65104 |
| ggc Gly 8465 | gag Glu | ctg Leu | ccg Pro | ccg Pro | ctg Leu 8470 | ttc Phe | tgc Cys | gtc Val | cat His | ccg Pro 8475 | gcc Ala | ggc Gly | ggg Gly | ctc Leu | 65149 |
| agc Ser 8480 | tgg Trp | tgc Cys | tac Tyr | ctg Leu | ccg Pro 8485 | ctg Leu | gcc Ala | cgg Arg | cac His | gtg Val 8490 | ccg Pro | gcc Ala | gac Asp | cgc Arg | 65194 |
| ccg Pro 8495 | atc Ile | tac Tyr | ggg Gly | ctg Leu | cag Gln 8500 | gag Ala | cgc Arg | ggc Gly | gcc Ala | gac Asp 8505 | ggc Gly | cgg Arg | gag Glu | ccg Pro | 65239 |
| ctc | gca | ccg | tcg | ctg | cgc | gag | atg | gcc | gcc | gac | tac | gtg | agc | cgg | 65284 |

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|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|------------|-------|
| Leu 8510 | Ala | Pro | Ser | Leu | Arg 8515 | Glu | Met | Ala | Ala | Asp 8520 | Tyr | Val | Ser | Arg | | |
| atg Met 8525 | cgc Arg | gcc Ala | gtg Val | cag Gln | ccc Pro 8530 | gag Glu | ggg Gly | ccg Pro | tac Tyr | cac His 8535 | gtg Val | ctc Leu | ggc Gly | ttc Phe | 65329 | |
| tcc Ser 8540 | ttc Phe | ggc Gly | gtg Val | gcg Ala | ccc Pro 8545 | gcg Ala | cac His | gag Glu | atc Ile | gcc Ala 8550 | gtc Val | cag Gln | ctg Leu | cgc Arg | 65374 | |
| gag Glu 8555 | cag Gln | ggc Gly | gcc Ala | gag Glu | gtc Val 8560 | gtg Val | ctg Leu | gtg Val | ctc Leu | atg Met 8565 | gac Asp | tcc Ser | tat Tyr | ccc Pro | 65419 | |
| atg Met 8570 | gag Glu | gat Asp | gcg Ala | gag Glu | tcc Ser 8575 | ggc Gly | gag Glu | cag Gln | gcg Ala | gcc Ala 8580 | gac Asp | gag Glu | gag Glu | gag Glu | 65464 | |
| ctg Leu 8585 | ccg Pro | tgg Trp | gag Glu | gag Glu | ctc Leu 8590 | atc Ile | gag Glu | gcc Ala | gag Glu | ttc Phe 8595 | ggc Gly | cgg Arg | gtg Val | ctc Leu | 65509 | |
| ggc Gly 8600 | ggc Gly | ttc Phe | tcc Ser | cgc Arg | gac Asp 8605 | gaa Glu | ctg Leu | gcg Ala | gcc Ala | ttc Phe 8610 | ggc Ala | ggc Ala | gtc Val | ttc Phe | 65554 | |
| cgc Arg 8615 | aac Asn | aac Asn | acc Thr | aag Lys | att Ile 8620 | cgc Arg | gca Ala | cgc Arg | cac His | cgg Arg 8625 | ctg Leu | ggc Gly | cgc Arg | ttc Phe | 65599 | |
| gac Asp 8630 | ggg Gly | gac Asp | gcc Ala | ctg Leu | ctg Leu 8635 | atc Ile | gcc Ala | tcg Ser | acc Thr | gac Asp 8640 | agc Ser | gca Ala | ccc Pro | gac Asp | 65644 | |
| ggc Gly 8645 | gag Glu | tcc Ser | aac Asn | acc Thr | tgg Trp 8650 | cgg Arg | tgg Trp | gcg Ala | ccg Pro | tac Tyr 8655 | atc Ile | acc Thr | ggt Gly | gag Glu | 65689 | |
| atc Ile 8660 | acc Thr | cag Gln | gtg Val | gtg Val | ctc Leu 8665 | ccc Pro | tgc Cys | gag Glu | cac His | acc Thr 8670 | gac Asp | ctg Leu | gta Val | cgc Arg | 65734 | |
| ccc Pro 8675 | gac Asp | atg Met | ctc Leu | gcg Ala | ctg Leu 8680 | ctc Leu | tgg Trp | ccg Pro | gcc Ala | gtc Val 8685 | gag Glu | gcg Ala | tgg Trp | cag Gln | 65779 | |
| gcc Ala 8690 | ggg Gly | cgg Arg | cac His | cga Arg | cct Pro 8695 | tag | tcaccacagc | | | | | | | | | |
| gtcagagagga ccgac | | | | | | | | | | | | | | | | |
| atg Met 1 | cag Gln | aag Lys | atc Ile | ccg Pro | ctc Leu | gtg Val | tgt Cys | gtg Val | ccg Pro | ttc Phe | gcc Ala | ggt Gly | gcc Ala | ggc Gly | 65870 | |
| gcc Ala | tcg Ser | ttc Phe | ttc Phe | cac His | ccg Pro | tgg Trp | gcc Ala | gag Glu | ctc Leu | gcc Ala | ggg Gly | ccg Pro | gac Asp | cgg Arg | ccg Pro | |
| 20 25 30 | | | | | | | | | | | | | | | | |
| atc Ile | gtc Val | gcg Ala | ctc Leu | cag Gln | ctt Leu | ccg Pro | ggc Gly | cgg Arg | gag Glu | tgg Trp | cgg Arg | ctg Leu | ctc Leu | gac Asp | gaa Glu | 65966 |

APPENDIX A

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-------|
| | | | 35 | | | | 40 | | | 45 | | | | | | | |
| cgc | tac | gcg | gac | gtc | gtc | gcg | gcc | gcg | gac | ctg | gcg | ctc | acc | gtc | | | 66014 |
| Pro | Tyr | Ala | Asp | Val | Val | Ala | Ala | Ala | Ala | Asp | Leu | Ala | Leu | Thr | Val | | |
| | | 50 | | | | | 55 | | | | | 60 | | | | | |
| gcc | gac | gag | gtg | ggc | gcg | ggg | ggc | cgg | gtg | gcg | ctc | ttc | ggg | cac | agc | | 66062 |
| Ala | Asp | Glu | Val | Gly | Ala | Gly | Gly | Arg | Val | Ala | Leu | Phe | Gly | His | Ser | | |
| | 65 | | | | | 70 | | | | | 75 | | | | | | |
| ctc | ggc | gcc | gtc | ctc | gcg | tac | gag | ata | gcg | cac | gcg | ctg | gtg | cgc | gac | | 66110 |
| Leu | Gly | Ala | Val | Leu | Ala | Tyr | Glu | Ile | Ala | His | Ala | Leu | Val | Arg | Asp | | |
| 80 | | | | | 85 | | | | | 90 | | | | | 95 | | |
| ggc | gag | gtg | ggc | gtg | gag | cgg | ctc | ttc | gtc | agc | ggc | tgc | ccc | gat | ccc | | 66158 |
| Gly | Glu | Val | Gly | Val | Glu | Arg | Leu | Phe | Val | Ser | Gly | Ser | Pro | Asp | Pro | | |
| | | | | 100 | | | | | 105 | | | | | 110 | | | |
| tgg | acc | cct | cgc | acc | aac | cgg | gcg | agc | ggc | ctg | gac | gac | gag | gag | ttc | | 66206 |
| Trp | Thr | Pro | Arg | Thr | Asn | Arg | Ala | Ser | Gly | Leu | Asp | Asp | Glu | Glu | Phe | | |
| | | | 115 | | | | | 120 | | | | | 125 | | | | |
| ctg | ctg | cgg | gtg | cgc | gag | ttc | gcc | ggt | tac | gac | cac | gag | gcg | ctc | gcc | | 66254 |
| Leu | Leu | Arg | Val | Arg | Glu | Phe | Ala | Gly | Tyr | Asp | His | Glu | Ala | Leu | Ala | | |
| | | 130 | | | | | 135 | | | | | 140 | | | | | |
| gat | cgc | gac | atg | cgc | gag | ctg | atc | ctg | ccc | gcg | ctg | cgc | gcc | gac | gtc | | 66302 |
| Asp | Pro | Asp | Met | Arg | Glu | Leu | Ile | Leu | Pro | Ala | Leu | Arg | Ala | Asp | Val | | |
| | 145 | | | | | 150 | | | | | 155 | | | | | | |
| gag | atg | cac | gag | agc | tac | gtg | gcg | ggc | agc | gcc | gat | ccg | ctg | ccc | gca | | 66350 |
| Glu | Met | His | Glu | Ser | Tyr | Val | Ala | Gly | Ser | Ala | Asp | Pro | Leu | Pro | Ala | | |
| 160 | | | | | 165 | | | | | 170 | | | | | 175 | | |
| ccc | gtc | acc | gcg | ctg | cac | gcc | cgc | gac | gac | gcg | ctg | gtc | tcc | gcc | gag | | 66398 |
| Pro | Val | Thr | Ala | Leu | His | Ala | Arg | Asp | Asp | Ala | Leu | Val | Ser | Ala | Glu | | |
| | | | | 180 | | | | | 185 | | | | | 190 | | | |
| cag | acg | gcc | ggg | tgg | agc | aag | gcc | acc | agc | ggc | ccg | ttc | cag | ctg | gtc | | 66446 |
| Gln | Thr | Ala | Gly | Trp | Ser | Lys | Ala | Thr | Ser | Gly | Pro | Phe | Gln | Leu | Val | | |
| | | | 195 | | | | | 200 | | | | | 205 | | | | |
| gag | gtg | gac | ggc | ggc | cac | atg | tac | ctc | acc | gag | gac | ccg | gcc | ggc | ctg | | 66494 |
| Glu | Val | Asp | Gly | Gly | His | Met | Tyr | Leu | Thr | Glu | Asp | Pro | Ala | Gly | Leu | | |
| | | 210 | | | | | 215 | | | | | 220 | | | | | |
| ctg | cgc | ctg | atc | gcc | gcc | gac | ctg | gac | cgt | gac | tga | | | | | | |
| Leu | Arg | Leu | Ile | Ala | Ala | Asp | Leu | Asp | Arg | Asp | | | | | | | |
| | 225 | | | | | 230 | | | | | | | | | | | |

accgaggag aaccc

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|
| gtg | cgc | ttg | acc | ggc | aag | acc | gcc | atc | gtc | acc | ggc | gcg | gcc | cgc | 66590 | |
| Val | Arg | Leu | Thr | Gly | Lys | Thr | Ala | Ile | Val | Thr | Gly | Ala | Ala | Arg | | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | |
| | | | | | | | | | | | | | | | | |
| ggc | ctc | ggc | cgc | gcc | tgc | gcc | gtg | gcc | ttc | gcc | gcc | gag | gga | gcc | gac | 66638 |
| Gly | Leu | Gly | Arg | Ala | Cys | Ala | Val | Ala | Phe | Ala | Ala | Glu | Gly | Ala | Asp | |
| | | | | 20 | | | | | 25 | | | | | 30 | | |
| | | | | | | | | | | | | | | | | |
| ctg | gtg | ctc | ctg | gac | cgc | gcg | gcc | gac | ctg | ccg | ggg | gtg | ccc | tat | ccg | 66686 |
| Leu | Val | Leu | Leu | Asp | Arg | Ala | Ala | Asp | Leu | Pro | Gly | Val | Pro | Tyr | Pro | |
| | | | 35 | | | | | 40 | | | | | 45 | | | |

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| | |
|---|-------|
| ctg ggc acc gtg ggc cag ctg gag cac acc gcc gac ctc tgc cgc aag Leu Gly Thr Val Gly Gln Leu Glu His Thr Ala Asp Leu Cys Arg Lys 50 55 60 | 66734 |
| cag ggc gcc gcg gtg ctc acc gtc cgg gcg gac gtg cgc gac ctc gcg Gln Gly Ala Ala Val Leu Thr Val Arg Ala Asp Val Arg Asp Leu Ala 65 70 75 | 66782 |
| gcg ctc acc gcg gcg gcc gat cgg gcg atc gac cgc ttc ggc ggc atc Ala Leu Thr Ala Ala Asn Asp Arg Ala Ile Asp Arg Phe Gly Gly Ile 80 85 90 95 | 66830 |
| gac gtg ctc gtc aac aac gcg ggc atc gcc gcg ccg tcc gga aag gtc Asp Val Leu Val Asn Asn Ala Gly Ile Ala Ala Pro Ser Gly Lys Val 100 105 110 | 66878 |
| acc cac gag atc acc gag gac gag tgg cag ctg atg atc gac gtc gac Thr His Glu Ile Thr Glu Asp Glu Trp Gln Leu Met Ile Asp Val Asp 115 120 125 | 66926 |
| ctc tcc ggc gcg tgg cgc atg acg gcg gcg gtc ggc cgg cac atg acc Leu Ser Gly Ala Trp Arg Met Thr Ala Ala Val Gly Arg His Met Thr 130 135 140 | 66974 |
| gag cgc cgc tcg ggc agc atc gtc aac atc gcc tcg acg gcc ggt cag Glu Arg Arg Ser Gly Ser Ile Val Asn Ile Ala Ser Thr Ala Gly Gln 145 150 155 | 67022 |
| gtc ggc tac cgg cac ttc gcc ggc tac gtc gcc gcc aag cac ggc atc Val Gly Tyr Arg His Phe Ala Gly Tyr Val Ala Ala Lys His Gly Ile 160 165 170 175 | 67070 |
| gtc ggg ctc acc cgg gcc gcc gcg ctc gac tac gcg cca gcg aag gtg Val Gly Leu Thr Arg Ala Ala Ala Leu Asp Tyr Ala Pro Ala Lys Val 180 185 190 | 67118 |
| cgg gtc aac gcc gtc tgc ccg ggt tcg gtg cgc gac gat ccg cag ttc Arg Val Asn Ala Val Cys Pro Gly Ser Val Arg Asp Asp Pro Gln Phe 195 200 205 | 67166 |
| gag ggc cgg atg ctg tcg gag atc gcc cgg tcg ctc gac gtg ccg gtc Glu Gly Arg Met Leu Ser Glu Ile Ala Arg Ser Leu Asp Val Pro Val 210 215 220 | 67214 |
| gcc gag cac gag cag acc ttc ctg cag gcg cag ccc atg aac gcc ctc Ala Glu His Glu Gln Thr Phe Leu Gln Ala Gln Pro Met Asn Ala Leu 225 230 235 | 67262 |
| atc gag ccg gac gac gtc gcc aac gcc gcg atc tgg ctc gcc tcc gac Ile Glu Pro Asp Asp Val Ala Asn Ala Ala Ile Trp Leu Ala Ser Asp 240 245 250 255 | 67310 |
| gaa tcg cgc cag gtc acc ggc tcc gtc gtc acg gtc gac ggc gga ttc Glu Ser Arg Gln Val Thr Gly Ser Val Val Thr Val Asp Gly Gly Phe 260 265 270 | 67358 |
| acc acg cgc Thr Thr Arg | |
| tga acggggagaa gac | |
| gtg ccc aag tcc cag ccc gcc acc aga acc gcg gcg ccc ggc gcc | 67428 |

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|-------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------|
| Val 1 | Pro | Lys | Ser | Gln 5 | Pro | Ala | Thr | Arg | Thr 10 | Ala | Ala | Pro | Gly | Ala 15 | | |
| gcc Ala | gag Glu | tgc Cys | cac His | gcg Ala 20 | ctt Leu | gcc Ala | gtg Val | cgc Arg | ctg Leu 25 | gcc Ala | gga Gly | ccg Pro | atc Ile | gac Asp 30 | ccg Pro | 67476 |
| gcg Ala | ccg Pro | atc Ile | gag Glu 35 | cgg Arg | cgg Arg | ctc Leu | gcc Ala 40 | gcc Ala | cgc Arg | atg Met | ccg Pro | ttc Phe | tgg Trp 45 | cac His | gag Glu | 67524 |
| cac His | gtg Val | gcg Ala 50 | gcc Ala | cgg Arg | cgc Pro | ggc Gly | gat Asp 55 | gag Glu | gcc Ala | gcg Ala | ctg Leu | cgc Arg | cgc Arg | cgc Arg | gag Glu | 67572 |
| cgc Arg | gaa Glu 65 | ctc Leu | gcc Ala | cgc Arg | ccg Pro | gtg Val 70 | ccg Pro | ccg Pro | gag Glu | ccc Pro | ggg Gly 75 | gcg Ala | cgg Arg | gcg Ala | gtg Val | 67620 |
| ctg Leu 80 | ctc Leu | gcc Ala | tac Tyr | gcg Ala | gac Asp 85 | ggc Gly | tcg Ser | gcc Ala | gac Asp | ctg Leu 90 | gtg Val | ctg Leu | gtg Val | gcc Ala | cgc Arg 95 | 67668 |
| cgc Arg | gac Asp | cgc Arg | ctg Leu | gac Asp 100 | cgc Arg | gac Asp | gcg Ala | ctg Leu | atc Ile 105 | gcc Ala | ctg Leu | gcc Ala | cgc Arg | ccg Pro 110 | gag Glu | 67716 |
| cgg Arg | gcg Ala | ccg Pro | cgc Arg 115 | ggg Gly | cgc Arg | aaa Lys | ccg Pro | gcg Ala 120 | gaa Glu | ccg Pro | gac Asp | gcg Ala | ccg Pro 125 | ccg Pro | ccc Pro | 67764 |
| tcg Ser | gcc Ala | gcg Ala 130 | ccc Pro | gcc Ala | tgg Trp | ggc Gly | ctg Leu 135 | ggc Gly | gac Asp | ggc Gly | ggc Gly | ccg Pro 140 | gac Asp | gac Asp | cgg Arg | 67812 |
| tgg Trp 145 | gcc Ala | gag Glu | ctg Leu | cgc Arg | gtg Val | ccg Pro 150 | gcg Ala | cgc Arg | ggc Gly | ccg Pro | gcc Ala 155 | gac Asp | ccg Pro | gcg Ala | cgc Arg | 67860 |
| tgg Trp 160 | ccc Pro | gcc Ala | gcg Ala | ctc Leu 165 | gcc Ala | aag Lys 165 | gtc Val | ctc Leu | gcc Ala 170 | cgg Arg | tac Tyr | gag Glu | ccg Pro | ggc Gly | gcg Ala 175 | 67908 |
| gct Ala | gcg Ala | ggc Gly | tcg Ser | ggc Gly 180 | gcg Ala | gcg Ala | gcg Ala | ggc Gly | ttg Leu 185 | ggc Gly | gcg Ala | gcg Ala | gcg Ala | ggc Gly 190 | tcg Ser | 67956 |
| ggg Gly | gtg Val | gcg Ala | gcg Ala 195 | ggc Gly | tcc Ser | agc Ser | gcc Ala 200 | gcc Ala | tcg Ser | ggc Gly | tcc Ser | ggc Gly | gcc Ala 205 | gcc Ala | gcg Ala | 68004 |
| gtc Val | ccc Pro | ggc Gly 210 | ccg Pro | gtg Val | gcg Ala | ctg Leu 215 | gcc Ala | ttc Phe | gac Asp | ggc Gly | gac Asp | ctc Leu 220 | gcc Ala | ccg Pro | ccg Pro | 68052 |
| gac Asp 225 | gag Glu | tac Tyr | gtg Val | ccc Pro | ttc Phe | ctg Leu 230 | gcg Ala | ccc Pro | acc Thr | cac His | ccg Pro 235 | ctc Leu | acc Thr | gtg Val | cag Gln | 68100 |
| gtc Val 240 | tcc Ser | cgg Arg | acg Thr | ccc Pro | ggc Gly 245 | ggc Gly | ggc Gly | acc Thr | gag Glu | ctg Leu 250 | cgg Arg | tgc Cys | cgc Arg | cac His | cgg Arg 255 | 68148 |
| ctc | ggc | gcg | gtc | tcg | ccg | gcc | gcc | gcc | gaa | gcg | ttc | gcc | cgg | atg | ctg | 68196 |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Leu | Gly | Ala | Val | Ser | Pro | Ala | Ala | Ala | Glu | Ala | Phe | Ala | Arg | Met | Leu | |
| | | | | 260 | | | | | 265 | | | | | 270 | | |
| gcc | gcg | gca | cac | ggc | gag | ccg | ccg | gcc | gat | gac | ggc | gcg | acc | gcc | gag | 68244 |
| Ala | Ala | Ala | His | Gly | Glu | Pro | Pro | Ala | Asp | Asp | Gly | Ala | Thr | Ala | Glu | |
| | | | 275 | | | | | 280 | | | | | 285 | | | |
| ccc | acg | ccg | ccg | gcc | gca | ccc | gca | ccc | gca | ccc | gca | cct | gcg | ccc | gcg | 68292 |
| Pro | Thr | Pro | Pro | Ala | Ala | Pro | Ala | Pro | Ala | Pro | Ala | Pro | Ala | Pro | Ala | |
| | | 290 | | | | | 295 | | | | | 300 | | | | |
| ccg | ccg | gct | gcg | gct | cgc | acg | ctg | acc | ggg | ctc | ttc | gcc | gag | cag | gtc | 68340 |
| Pro | Pro | Ala | Ala | Ala | Arg | Thr | Leu | Thr | Gly | Leu | Phe | Ala | Glu | Gln | Val | |
| | 305 | | | | | 310 | | | | | 315 | | | | | |
| gcc | gct | cgt | ccc | acg | gcc | gtc | gcc | gtc | tgc | gac | gat | ccg | ggg | ccg | cac | 68388 |
| Ala | Ala | Arg | Pro | Thr | Ala | Val | Ala | Val | Ser | Asp | Asp | Arg | Gly | Arg | His | |
| 320 | | | | | 325 | | | | | 330 | | | | | 335 | |
| acc | tac | cgc | gag | ctc | gac | gag | tgg | tcc | ggc | ccg | ctg | gcc | ccg | ggg | ctg | 68436 |
| Thr | Tyr | Arg | Glu | Leu | Asp | Glu | Trp | Ser | Gly | Arg | Leu | Ala | Arg | Gly | Leu | |
| | | | | 340 | | | | | 345 | | | | | 350 | | |
| ccg | aag | gcc | ggc | gtg | cgc | gac | ggc | gac | gcg | gtc | ggc | gtc | tgc | ctc | gac | 68484 |
| Arg | Lys | Ala | Gly | Val | Arg | Asp | Gly | Asp | Ala | Val | Gly | Val | Cys | Leu | Asp | |
| | | | 355 | | | | | 360 | | | | | 365 | | | |
| cgc | tgc | gcc | gag | ctc | gtc | gcc | gtg | ctc | ctc | gcg | gtc | ctc | aag | gcc | ggc | 68532 |
| Arg | Ser | Ala | Glu | Leu | Val | Ala | Val | Leu | Leu | Ala | Val | Leu | Lys | Ala | Gly | |
| | | 370 | | | | | 375 | | | | | 380 | | | | |
| gcc | gcc | tat | gtg | ccg | ctc | gac | gcg | gcg | tac | ccg | gcc | gac | cgc | atc | gcc | 68580 |
| Ala | Ala | Tyr | Val | Pro | Leu | Asp | Ala | Ala | Tyr | Pro | Ala | Asp | Arg | Ile | Ala | |
| | | 385 | | | | 390 | | | | | 395 | | | | | |
| tac | acc | gtc | ggc | gac | gcc | ggc | ctc | gcg | gtc | gtg | gtc | acc | acc | tgc | gcg | 68628 |
| Tyr | Thr | Val | Gly | Asp | Ala | Gly | Leu | Ala | Val | Val | Val | Thr | Thr | Ser | Ala | |
| 400 | | | | | 405 | | | | 410 | | | | | | 415 | |
| gac | ttt | ccc | gac | gtg | gac | ggg | gtg | ccg | ctg | ctc | gcg | ccg | gag | agc | ctc | 68676 |
| Asp | Phe | Pro | Asp | Val | Asp | Gly | Val | Arg | Leu | Leu | Ala | Pro | Glu | Ser | Leu | |
| | | | | 420 | | | | 425 | | | | | | 430 | | |
| gcc | gag | gcc | ggc | gac | gac | ccg | ggc | atc | ccg | ctc | gcc | acc | ccg | gcc | ggc | 68724 |
| Ala | Glu | Ala | Gly | Asp | Asp | Pro | Gly | Ile | Pro | Leu | Ala | Thr | Pro | Ala | Gly | |
| | | | 435 | | | | | 440 | | | | | 445 | | | |
| ccg | gag | ccg | ccg | gcc | tat | gtc | atc | tac | acg | tcc | ggg | tcc | acg | ggc | ccg | 68772 |
| Pro | Glu | Arg | Pro | Ala | Tyr | Val | Ile | Tyr | Thr | Ser | Gly | Ser | Thr | Gly | Arg | |
| | | 450 | | | | | 455 | | | | | 460 | | | | |
| ccc | aag | ggc | gtg | gtc | gtc | ccg | cac | gcc | aac | gtg | tcc | gcg | ctg | ctc | gac | 68820 |
| Pro | Lys | Gly | Val | Val | Val | Pro | His | Ala | Asn | Val | Ser | Ala | Leu | Leu | Asp | |
| | 465 | | | | | 470 | | | | 475 | | | | | | |
| gcc | acg | cgc | gag | gag | tac | gcg | ctc | ggc | ccc | ggc | gac | gtg | tgg | acc | ttc | 68868 |
| Ala | Thr | Arg | Glu | Glu | Tyr | Ala | Leu | Gly | Pro | Gly | Asp | Val | Trp | Thr | Phe | |
| 480 | | | | | 485 | | | | | 490 | | | | | 495 | |
| ttc | cac | tgc | gcc | gcc | ttc | gac | ttc | tcc | gtc | tgg | gag | atc | tgg | ggc | tgc | 68916 |
| Phe | His | Ser | Ala | Ala | Phe | Asp | Phe | Ser | Val | Trp | Glu | Ile | Trp | Gly | Cys | |
| | | | | 500 | | | | | 505 | | | | | 510 | | |
| ctg | ctc | acc | ggc | ggc | cac | ctc | gtc | gtc | gtc | ccg | tac | tgg | gtg | tcc | cgc | 68964 |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Leu | Leu | Thr | Gly | Gly | His | Leu | Val | Val | Val | Pro | Tyr | Trp | Val | Ser | Arg | |
| | | | 515 | | | | | 520 | | | | | 525 | | | |
| tgc | ccg | gag | cag | ttc | cac | gac | ctg | ctc | gcc | gag | cgc | ggc | gtc | acc | gtg | 69012 |
| Ser | Pro | Glu | Gln | Phe | His | Asp | Leu | Leu | Ala | Glu | Arg | Gly | Val | Thr | Val | |
| | | 530 | | | | | 535 | | | | | 540 | | | | |
| ctc | aac | cag | acg | ccg | tcc | agc | ttc | acg | cag | ctc | gtg | gcc | gcc | gac | cgc | 69060 |
| Leu | Asn | Gln | Thr | Pro | Ser | Ser | Phe | Thr | Gln | Leu | Val | Ala | Ala | Asp | Arg | |
| | 545 | | | | | 550 | | | | | 555 | | | | | |
| ggg | gcg | gag | cgc | gac | ctc | gcc | gta | cgc | ctg | gtg | att | ttc | ggg | ggg | gag | 69108 |
| Gly | Ala | Glu | Arg | Asp | Leu | Ala | Val | Arg | Leu | Val | Ile | Phe | Gly | Gly | Glu | |
| 560 | | | | | 565 | | | | | 570 | | | | | 575 | |
| ccg | ctc | gac | gcc | cgg | acg | gtg | ctg | ccc | tgg | ctg | gac | cgc | cgt | ccc | gag | 69156 |
| Pro | Leu | Asp | Ala | | Thr | Val | Leu | Pro | Trp | Leu | Asp | Arg | Arg | Pro | Glu | |
| | | | | 580 | | | | | 585 | | | | | 590 | | |
| gcg | cgc | tgc | cgg | ctg | gtc | aac | atg | ttc | ggc | atc | acc | gag | acc | acc | gtg | 69204 |
| Ala | Arg | Cys | Arg | Leu | Val | Asn | Met | Phe | Gly | Ile | Thr | Glu | Thr | Thr | Val | |
| | | | 595 | | | | | 600 | | | | | 605 | | | |
| cac | gtc | acg | gcg | gtc | gac | gtc | acg | cgc | gcg | gcc | gcg | ctc | gcc | ggc | tcc | 69252 |
| His | Val | Thr | Ala | Val | Asp | Val | Thr | Arg | Ala | Ala | Ala | Leu | Ala | Gly | Ser | |
| | | 610 | | | | | 615 | | | | | 620 | | | | |
| cgg | tgc | gtc | ggc | cgc | ccg | ctg | ccc | ggc | tgg | gcc | gtg | cgc | gtg | ctc | gac | 69300 |
| Arg | Ser | Val | Gly | Arg | Pro | Leu | Pro | Gly | Trp | Ala | Val | Arg | Val | Leu | Asp | |
| | | 625 | | | | 630 | | | | | 635 | | | | | |
| gag | cag | cgc | cgc | gag | gtg | ccg | ccg | ggc | gtg | ccg | ggc | gag | atc | tac | gtg | 69348 |
| Glu | Gln | Arg | Arg | Glu | Val | Pro | Pro | Gly | Val | Pro | Gly | Glu | Ile | Tyr | Val | |
| 640 | | | | | 645 | | | | | 650 | | | | | 655 | |
| ggc | ggc | gcc | ggc | gtg | gcg | atc | ggc | tac | ctc | aac | cgc | ccg | gag | ctg | acc | 69396 |
| Gly | Gly | Ala | Gly | Val | Ala | Ile | Gly | Tyr | Leu | Asn | Arg | Pro | Glu | Leu | Thr | |
| | | | | 660 | | | | | 665 | | | | | 670 | | |
| gcc | gag | cgg | ttc | gtc | acc | ggc | ccg | gac | ggc | cgg | cgc | tgg | tac | cgc | tcc | 69444 |
| Ala | Glu | Arg | Phe | Val | Thr | Gly | Pro | Asp | Gly | Arg | Arg | Trp | Tyr | Arg | Ser | |
| | | | 675 | | | | | 680 | | | | | 685 | | | |
| ggc | gac | cgc | ggc | cgg | ctg | ctg | ccc | gac | ggc | acc | ctg | gaa | cac | ctg | ggc | 69492 |
| Gly | Asp | Arg | Gly | Arg | Leu | Leu | Pro | Asp | Gly | Thr | Leu | Glu | His | Leu | Gly | |
| | | 690 | | | | | 695 | | | | | 700 | | | | |
| cgg | ctc | gac | gac | cag | gtc | aag | ctg | cgc | ggc | ttc | cgg | atc | gag | ctg | gac | 69540 |
| Arg | Leu | Asp | Asp | Gln | Val | Lys | Leu | Arg | Gly | Phe | Arg | Ile | Glu | Leu | Asp | |
| | | 705 | | | | 710 | | | | | 715 | | | | | |
| gag | atc | cgg | ggc | gtg | ctc | acc | gag | tgc | gcc | ggg | gtg | gcg | gcg | gcc | gcg | 69588 |
| Glu | Ile | Arg | Gly | Val | Leu | Thr | Glu | Cys | Ala | Gly | Val | Ala | Ala | Ala | Ala | |
| 720 | | | | | 725 | | | | | 730 | | | | | 735 | |
| gtc | gtc | atc | cgg | cgc | tcc | act | ccg | gac | gat | ccg | gcg | acc | gcg | cgg | ctc | 69636 |
| Val | Val | Ile | Arg | Arg | Ser | Thr | Pro | Asp | Asp | Pro | Ala | Thr | Ala | Arg | Leu | |
| | | | | 740 | | | | | 745 | | | | | 750 | | |
| gac | gcg | tac | gtg | gtc | gcc | gag | gcc | ggc | gcc | acc | ccg | ccg | gtg | gcc | gag | 69684 |
| Asp | Ala | Tyr | Val | Val | Ala | Glu | Ala | Gly | Ala | Thr | Pro | Pro | Val | Ala | Glu | |
| | | | 755 | | | | | 760 | | | | | 765 | | | |
| cac | gcg | gcc | cgg | atg | ctg | ccg | gcc | tac | atg | tgc | ccg | gcg | acc | ttc | acg | 69732 |

APPENDIX A

| | | | | | | | | | | | | | | | | |
|---------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| His | Ala | Ala | Arg | Met | Leu | Pro | Ala | Tyr | Met | Cys | Pro | Ala | Thr | Phe | Thr | |
| | 770 | | | | | | 775 | | | | | 780 | | | | |
| ttc | ctg | gac | gcg | ctg | ccg | atg | acg | ccg | aac | ggc | aag | gtg | gac | aag | gcc | 69780 |
| Phe | Leu | Asp | Ala | Leu | Pro | Met | Thr | Pro | Asn | Gly | Lys | Val | Asp | Lys | Ala | |
| | 785 | | | | | 790 | | | | | 795 | | | | | |
| gcc | ctg | ccc | gag | ccc | gcg | cgc | ccg | gcc | gcc | gac | gct | gcg | gcg | acg | ccg | 69828 |
| Ala | Leu | Pro | Glu | Pro | Ala | Arg | Pro | Ala | Ala | Asp | Ala | Ala | Ala | Thr | Pro | |
| 800 | | | | | 805 | | | | | 810 | | | | | 815 | |
| gcc | ggc | ccg | ggg | gag | gac | ggg | ctc | gcg | ggc | gac | ctg | gcc | gac | gtg | tgg | 69876 |
| Ala | Gly | Pro | Gly | Glu | Asp | Gly | Leu | Ala | Gly | Asp | Leu | Ala | Asp | Val | Trp | |
| | | | | 820 | | | | | 825 | | | | | 830 | | |
| cag | cag | gtc | ttc | ggc | tgc | ccg | gtg | acc | gtc | tcg | gac | aac | ttc | ttc | gac | 69924 |
| Gln | Gln | Val | Phe | Gly | Cys | Pro | Val | Thr | Val | Ser | Asp | Asn | Phe | Phe | Asp | |
| | | | 835 | | | | | 840 | | | | | 845 | | | |
| ctc | ggc | ggc | aac | tcg | ctg | ctc | gcc | gtg | cgg | atg | gcg | gcg | ctg | atg | cgc | 69972 |
| Leu | Gly | Gly | Asn | Ser | Leu | Leu | Ala | Val | Arg | Met | Ala | Ala | Leu | Met | Arg | |
| | | 850 | | | | | 855 | | | | | 860 | | | | |
| cgc | cgc | ggc | ctg | ccc | cgg | ctg | cat | ccg | cgc | acc | ctc | tac | ctg | cac | ccc | 70020 |
| Arg | Arg | Gly | Leu | Pro | Arg | Leu | His | Pro | Arg | Thr | Leu | Tyr | Leu | His | Pro | |
| | 865 | | | | | 870 | | | | | 875 | | | | | |
| acc | gtg | cgc | ggc | ctc | gcg | gac | gcg | ttg | cgc | tcg | gcc | | | | | |
| Thr | Val | Arg | Gly | Leu | Ala | Asp | Ala | Leu | Arg | Ser | Ala | | | | | |
| 880 | | | | | 885 | | | | | 890 | | | | | | |
| tga cagtcctcctc gccctctcga gaagtacggg | | | | | | | | | | | | | | | | 70089 |
| agaagcacc | | | | | | | | | | | | | | | | |
| atg | cga | aac | ctg | cgt | cgg | acc | acc | ggc | atc | gga | | | | | | 70131 |
| Met | Arg | Asn | Leu | Arg | Arg | Thr | Thr | Gly | Ile | Gly | | | | | | |
| 1 | | | | 5 | | | | 10 | | | | | | | | |
| ctg | ctc | gcg | ctg | ctg | agc | gtg | gcg | gcg | tgc | agc | tcg | acc | ccc | gcg | gcg | 70179 |
| Leu | Leu | Ala | Leu | Leu | Ser | Val | Ala | Ala | Cys | Ser | Ser | Thr | Pro | Ala | Ala | |
| | | | 15 | | | | | 20 | | | | | 25 | | | |
| agc | gag | ccc | ccg | ccg | tcc | gcg | gcg | ccg | ccc | tcg | gcc | gtg | acg | gcc | acc | 70227 |
| Ser | Glu | Pro | Pro | Pro | Ser | Ala | Ala | Pro | Pro | Ser | Ala | Val | Thr | Ala | Thr | |
| | | 30 | | | | | 35 | | | | | 40 | | | | |
| ggc | ccg | gcg | gcc | gag | aag | gcc | gtc | aag | tcg | ggc | acc | cag | acc | tat | cac | 70275 |
| Gly | Pro | Ala | Ala | Glu | Lys | Ala | Val | Lys | Ser | Gly | Thr | Gln | Thr | Tyr | His | |
| | 45 | | | | | 50 | | | | | 55 | | | | | |
| cag | gcg | ctc | gac | gcc | ttc | gtc | gcg | gcg | agc | aac | aag | ggc | acg | acc | gac | 70323 |
| Gln | Ala | Leu | Asp | Ala | Phe | Val | Ala | Ala | Ser | Asn | Lys | Gly | Thr | Thr | Asp | |
| 60 | | | | | 65 | | | | | 70 | | | | | 75 | |
| acc | acc | gag | atc | ggc | aag | tac | gcg | tcc | ggc | cgg | gcg | ctg | atg | acc | ttc | 70371 |
| Thr | Thr | Glu | Ile | Gly | Lys | Tyr | Ala | Ser | Gly | Arg | Ala | Leu | Met | Thr | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | | |
| cag | ggc | atc | ctc | gcc | tcc | tac | cag | cag | cag | ggc | gtg | cac | acc | agc | ggc | 70419 |
| Gln | Gly | Ile | Leu | Ala | Ser | Tyr | Gln | Gln | Gln | Gly | Val | His | Thr | Ser | Gly | |
| | | | 95 | | | | | 100 | | | | | 105 | | | |

APPENDIX A

| | |
|---|-------|
| gag ccg cgc atc gac gag ccg gtc gtc acc ggg ctc acc ccg ccg gcc Glu Pro Arg Ile Asp Glu Pro Val Val Thr Gly Leu Thr Pro Pro Ala 110 115 120 | 70467 |
| gac ccc acc ggc gtc cag ctg cgc ggc tgc atc gac atc agc gcc tgg Asp Pro Thr Gly Val Gln Leu Arg Gly Cys Ile Asp Ile Ser Ala Trp 125 130 135 | 70515 |
| ccg ctg acg aag gcc gac ggg acc ccg gcc gac aag gtg ggc ggg cag Pro Leu Thr Lys Ala Asp Gly Thr Pro Ala Asp Lys Val Gly Gly Gln 140 145 150 155 | 70563 |
| cag ggc agc ggg ccc agc gcg atc ctg gcg aac gtc gcc cgc tgc ggt Gln Gly Ser Gly Pro Ser Ala Ile Leu Ala Asn Val Ala Arg Ser Gly 160 165 170 | 70611 |
| gcc acc tgg cag gtg acc gag ctg gcc atc cag gga ccc tgc gcg gcg Ala Thr Trp Gln Val Thr Glu Leu Ala Ile Gln Gly Pro Cys Ala Ala 175 180 185 | 70659 |
| tga ccgtccggcg | 70672 |
| atggctaccg gccgggctca cggtcctggc gtctgcgcgc ggcttctggc agaagctgcc | 70732 |
| ctgccaggcc gctggctggc cggacgacac cgcgacgctg ttccggccgct actgctacag | 70792 |
| cgacgtgccg attctcttcc gggagcgcgg ccttttcgac ggcattttcc cgtacgagtc | 70852 |
| cgggcccggc gccagccgc tggagtacc cgtcctcacc ggctacctga tggacgccac | 70912 |
| ggcccggctc gtctgcgcga tctgcccgg cgcggacgtg gccgtcgcct cccgggcgta | 70972 |
| cttctcacg acggtcctgg tctgtctcgc cctcgcggtc ctgaccgtgt gggcgaccgg | 71032 |
| tgcggtgctg cgcgcaccg gcgggcccgc gggcgacgcg ctgctggtcg ccgccgcacc | 71092 |
| ggtgctgate ctggccggca cgggtaactg ggacctgctc gccgtcgcgg cggcggtgct | 71152 |
| cgcgatcctc gcctgggaac gggaccgccc gctgctggcc ggcgtgctga tccggctggg | 71212 |
| cacggcggcc aagctgttcc cgtggtgct gctcggcccg gtgctgctgc tctgcctccg | 71272 |
| gcagcggcgg atgcggcggt tgcgccgct ggccgcgggt gccgcgggg cctggcttct | 71332 |
| ggtcaacctg ccggtggtcg cgtgcaacc ggacggctgg atggagttct ggcggttcaa | 71392 |
| cgcggggcgc ggggcccaggt tcgggtcgt ctggttcgcg ctggacgggc tcggcctgca | 71452 |
| catgccggcg gtgaacgcg tcgccctggc gacgttcggc gtgctgctgg ccgggatcgc | 71512 |
| ggtgctggct ctgcggtcgc gccggccgcc ggacctggcg caactcgcct gcctggccgt | 71572 |
| cggcgcgttc ctgctgacca acaaggtcta ctgcgcgag tacgcgctct ggctcctgcc | 71632 |
| gctcgtggtg atgcgccgtg ggcgggtccc gcggtggccg gtggtgcgcg actgggcccgt | 71692 |
| ctggcaggcc gccgaggtgc tctactggct cgcggtgtgg agctggctcg ccggttcgct | 71752 |
| gaccgacgag cggcagtag cctgggcaac cgtcctgcgc gtgctcgcca cggcgtacgt | 71812 |
| ctgtggtcag gtggtgtggg acgtgctcgc cgcctcgcgc ccgcaccggc cggcgcgcgc | 71872 |
| cccggcggct gccgagccgg cccaccggg ctgaccggg caacgagaga tcccctcgcc | 71932 |

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| | | | | | | |
|-------------|------------|-------------|-------------|------------|------------|-------|
| gccggcgggcg | aggggatctc | tgttcgtgtg | ctcagtcggc | ggcgacccac | gtgaggccgt | 71992 |
| tgcgggaagg | ggtcagcccg | ccctcgaaca | gcggtctgctc | ctgcgtgccc | tccggggcca | 72052 |
| ggatcgcgcc | ggcctggatc | tgcgagcctt | cgaacatggc | ctgcgccacg | acgctcgacc | 72112 |
| cgcgcaggaa | gccggtgccg | ccctcctcga | ggcgggccac | cgcctggccc | agctccgagg | 72172 |
| tctgccggga | gtgccgcgc | accagctcgg | tggagccggg | cagcgcgctc | tgcgccgagg | 72232 |
| cgatgccgcc | gaccaactcg | gtgaacgact | ccatggccgg | tgcgtgctc | tccgtcacct | 72292 |
| tgcggggcg | ccagaagtac | gagctctcat | cgacgtgcat | gtcgtagaag | ctcaccagga | 72352 |
| agtcgtggaa | gacgccgaac | tgcgcgcggg | agcgctgctc | gaactcgggt | aaggcgcggt | 72412 |
| cctcgccac | cgtgccggcc | agcacgctgt | tgatggagcg | ggccgcgagc | aggccgctgt | 72472 |
| aggtcgccag | gtgcacgccg | gaggagaaca | ccgggtcgat | gaagcaggcg | gcgtcgccga | 72532 |
| ccaggcacat | gcccgccgc | cagtacgagg | tgctggagta | ggagtagtcc | ttgccgaccc | 72592 |
| ggatctggcc | gtagtcgcc | tccgtgaccc | gggtggcgctc | accgaggaag | tccgcgatca | 72652 |
| tccggcactc | ggcgatcagc | tgaacagcg | ccttctcctg | gtcgccctgc | accttgtgtg | 72712 |
| ccatctcccg | gcccaccacc | gcgcgcagc | tggtcagcgt | ctcgtgagc | gggatgtacc | 72772 |
| agaaccagcc | ggagccgaag | gcgacgcaga | ggatgttgcc | ggagttcggc | gcccgcagcc | 72832 |
| gccggccgtt | ctcgaagtag | ccgaagagcg | cgaggttgcg | gaagaacggc | gagtattcgc | 72892 |
| gggtgccgcc | gaccgtcgtg | tgcaggggtg | tgcggttgcc | cgaggcgctc | acgacgaagc | 72952 |
| gcgccagcgc | ggtgcgggtc | tgcccgctct | gggtgaaacg | gacgccgcgg | acccgctcgt | 73012 |
| cgtcggcgat | cgcctcggtc | accgggtggt | tctcccgga | gtcgacgccc | agccggcgcg | 73072 |
| cgttctccag | caggatctgg | tgaaccggc | ggcgctccac | ctggaacgcg | tgcgaggtcg | 73132 |
| gcccgcccat | ccggggcgag | gtggcgaagg | tgaacgtcca | cggctcggtc | ctggtgcccc | 73192 |
| acttgaacgt | gcccgcgtgc | ttgcgcgatga | acccggcctt | ggcgatctcg | tgcgcgaccc | 73252 |
| cgagcagggt | gcagacaccg | tgcacggtgg | acggcagcag | cgattcgccg | atctggtacc | 73312 |
| gcgggaactt | ctcccgctcc | agcagcagca | ccttggcgcc | ctgcttggcg | gtcagcgccg | 73372 |
| cggcggtgga | accgcccggc | ccgcgcgcga | ccacgatgac | atcgaactct | tccggttgag | 73432 |
| cagccacgaa | tcctcctcag | cgaccatctg | agctgcatga | tggttgccgc | gggcgcgtgt | 73492 |
| gcgccacgtg | tccgcccacc | cgcggcggtc | gaccgcggat | gtcgccggtc | gcacgctcgc | 73552 |
| gcggggcggg | tcagctcccc | tgcaccagcc | ggttctccca | ggcccaggcc | gccacgcgga | 73612 |
| cccggttgcg | tacgcccatt | ttggactgga | togtggaggg | gtgccccttc | accgtgctca | 73672 |
| gcgagatgaa | gagatcggcc | gcgatctcct | ggttcgtgcg | gccgcggggc | atcgcccgcg | 73732 |
| ccacctcgag | ctcgcggtcg | gagaggggaa | tgggctcgga | gccggccggc | gccgcgcagg | 73792 |
| cgttcagggtg | gttcagcagc | cgcacggtga | ccgacggcga | gaccagcgcg | tgcgccctgt | 73852 |

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gcgcccgcgcg gacggcctcc accagcagtg tcggggccggc gtccttgagg atgaagccga 73912
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 gtcggcgctc cgcagcaggc ccacgaccgc gcgcatggcc gcgagggcct cgggtgcggc 74692
 cgtttcgatg accgccagcc gctcgggcac gcgcccggcg tcgcgcgcgc cgagcacctg 74752
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 cgcgatgttc atgccgcca aggatagggg cgaatcgggc gccgccaagg ggtcaaaagt 75472
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cg

atg 75537

Met

1

aag gcc atg tct cac gag cgc tcc act ccc gtt ctg cag gcc gag ggc 75585

APPENDIX A

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Lys | Ala | Met | Ser | His | Glu | Arg | Ser | Thr | Pro | Val | Leu | Gln | Ala | Glu | Gly | |
| | | | 5 | | | | | 10 | | | | | 15 | | | |
| ctg | acg | aaa | cgc | tac | ggc | cgg | cgg | agg | gcc | ctg | acc | gac | tgc | acg | ctc | 75633 |
| Leu | Thr | Lys | Arg | Tyr | Gly | Arg | Arg | Arg | Ala | Leu | Thr | Asp | Cys | Thr | Leu | |
| | | 20 | | | | | 25 | | | | | 30 | | | | |
| tcc | gtt | ccc | tcc | gga | cgg | gtg | atc | gcg | ctg | gtc | gga | ccg | cgc | ggc | tcg | 75681 |
| Ser | Val | Pro | Ser | Gly | Arg | Val | Ile | Ala | Leu | Val | Gly | Pro | Arg | Gly | Ser | |
| | 35 | | | | | 40 | | | | | 45 | | | | | |
| ggc | aag | tcc | aca | ctg | ctg | cag | ctg | tgc | tgc | ggg | atg | gtc | gcg | ccg | agc | 75729 |
| Gly | Lys | Ser | Thr | Leu | Leu | Gln | Leu | Cys | Cys | Gly | Met | Val | Ala | Pro | Ser | |
| 50 | | | | | 55 | | | | | 60 | | | | | 65 | |
| cgg | ggc | cgg | atc | cgg | gtt | ctg | ggg | gag | cgc | ccg | gac | gcg | ggc | gcg | gcg | 75777 |
| Arg | Gly | Arg | Ile | Arg | Val | Leu | Gly | Glu | Arg | Pro | Asp | Ala | Gly | Ala | Ala | |
| | | | | 70 | | | | 75 | | | | | | 80 | | |
| cac | ctg | gcg | cgg | gtg | gga | tac | gta | ccg | cgg | gag | ccg | gcg | gtg | tac | ggc | 75825 |
| His | Leu | Ala | Arg | Val | Gly | Tyr | Val | Pro | Arg | Glu | Pro | Ala | Val | Tyr | Gly | |
| | | | 85 | | | | | 90 | | | | | 95 | | | |
| tcg | ttc | acg | gtg | gaa | gac | cac | ctc | acg | atg | ggc | gcg | cgg | ctc | aat | ccg | 75873 |
| Ser | Phe | Thr | Val | Glu | Asp | His | Leu | Thr | Met | Gly | Ala | Arg | Leu | Asn | Pro | |
| | | 100 | | | | | 105 | | | | | 110 | | | | |
| cgg | tgg | gac | cgg | cgg | ctg | gcc | gac | cgg | cgc | atc | gcc | tcg | gcc | ggc | att | 75921 |
| Arg | Trp | Asp | Arg | Arg | Leu | Ala | Asp | Arg | Arg | Ile | Ala | Ser | Ala | Gly | Ile | |
| | 115 | | | | | 120 | | | | | 125 | | | | | |
| ccg | cgt | acc | cgg | cgc | gcg | gac | cgg | ctc | tcc | gcc | ggc | cag | cgg | gcc | gag | 75969 |
| Pro | Arg | Thr | Arg | Arg | Ala | Asp | Arg | Leu | Ser | Ala | Gly | Gln | Arg | Ala | Glu | |
| 130 | | | | | | 135 | | | | 140 | | | | | 145 | |
| ctg | gcg | ttg | acc | ctg | gcc | ggc | ggc | aag | cgc | ccg | gag | ctg | ctc | gtg | ctc | 76017 |
| Leu | Ala | Leu | Thr | Leu | Ala | Gly | Gly | Lys | Arg | Pro | Glu | Leu | Leu | Val | Leu | |
| | | | | 150 | | | | 155 | | | | | | 160 | | |
| gac | gag | ccc | ggc | gcg | gtg | ctg | gat | gcg | ccg | gcc | cgc | gcc | tcg | ttc | ctg | 76065 |
| Asp | Glu | Pro | Gly | Ala | Val | Leu | Asp | Ala | Pro | Ala | Arg | Ala | Ser | Phe | Leu | |
| | | | 165 | | | | | 170 | | | | | 175 | | | |
| cgc | ggc | gtg | ctc | gac | ttc | gtc | gcc | gag | atc | gac | gcg | agc | gtg | ctg | atc | 76113 |
| Arg | Gly | Val | Leu | Asp | Phe | Val | Ala | Glu | Ile | Asp | Ala | Ser | Val | Leu | Ile | |
| | | 180 | | | | | 185 | | | | | 190 | | | | |
| tcc | ggt | cac | ccg | tcc | gga | gag | gtg | gag | cgg | ctc | tgc | gac | cac | ctg | atc | 76161 |
| Ser | Gly | His | Pro | Ser | Gly | Glu | Val | Glu | Arg | Leu | Cys | Asp | His | Leu | Ile | |
| | 195 | | | | | 200 | | | | | 205 | | | | | |
| gtg | ctg | tcc | gac | tcc | cgg | gtg | ctc | gtc | gcc | ggc | gac | gtc | cgg | gac | ctg | 76209 |
| Val | Leu | Ser | Asp | Ser | Arg | Val | Leu | Val | Ala | Gly | Asp | Val | Arg | Asp | Leu | |
| 210 | | | | | 215 | | | | | 220 | | | | | 225 | |
| ctc | gcc | cgg | cac | cac | cgc | atc | atc | gcg | ccg | cgc | ggc | gag | ctg | gac | cgc | 76257 |
| Leu | Ala | Arg | His | His | Arg | Ile | Ile | Ala | Pro | Arg | Gly | Glu | Leu | Asp | Arg | |
| | | | | 230 | | | | | 235 | | | | | 240 | | |
| ctg | ccg | ccg | ggg | atg | gag | ccc | atc | tgg | gtg | gag | gac | ttc | ggc | tcg | tac | 76305 |
| Leu | Pro | Pro | Gly | Met | Glu | Pro | Ile | Trp | Val | Glu | Asp | Phe | Gly | Ser | Tyr | |
| | | | 245 | | | | | 250 | | | | | 255 | | | |
| agc | ggg | gga | gtg | gtg | cgg | gcc | gag | gtg | gac | ctg | ccc | cgg | cgg | ccg | tgg | 76353 |

APPENDIX A

| | | | | | | | | | | | | | | | | |
|-------------|-------------|------------|-------------|-------------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Ser | Gly | Gly | Val | Val | Arg | Ala | Glu | Val | Asp | Leu | Pro | Arg | Arg | Pro | Trp | |
| | 260 | | | | | | 265 | | | | | 270 | | | | |
| acg | gtg | gag | cgg | gtc | gag | ctc | gag | gag | ctg | gtg | ctc | agc | tat | ctg | agc | 76401 |
| Thr | Val | Glu | Arg | Val | Glu | Leu | Glu | Glu | Leu | Val | Leu | Ser | Tyr | Leu | Ser | |
| | 275 | | | | | 280 | | | | | 285 | | | | | |
| cgg | gcc | tcg | ggc | gcg | ccc | gcg | ctc | gcc | ggc | tgc | ctg | atc | gcg | ccc | ggc | 76449 |
| Arg | Ala | Ser | Gly | Ala | Pro | Ala | Leu | Ala | Gly | Cys | Leu | Ile | Ala | Pro | Gly | |
| 290 | | | | | 295 | | | | 300 | | | | | | 305 | |
| cag | ccg | ggg | agc | | | | | | | | | | | | | |
| Gln | Pro | Gly | Ser | | | | | | | | | | | | | |
| tga | cgggcgctca | | | | | | | | | | | | | | | 76474 |
| ggctccagcag | ccggctggtg | cgtacccggt | cgggcgccat | ctcgaagagc | tggtgctcca | | | | | | | | | | | 76534 |
| cgtgctcgcg | ctcgccacg | ctcagcacgg | cctcgccgcc | gagccggccg | gccagcccgt | | | | | | | | | | | 76594 |
| ccaggacggc | cagcagcgcc | ggccggtgga | gccggccacc | ggcgcgccac | accccgaggg | | | | | | | | | | | 76654 |
| cgcaggccgc | ggccagcagc | acggtgtacc | ggtcggccag | cgcgaaggcg | ggccgggttg | | | | | | | | | | | 76714 |
| cgtcgatcgt | gatgtcggcc | ggccccagct | cccggcaggc | gtcccgcagg | ccggtcagct | | | | | | | | | | | 76774 |
| cccgggtgaa | ccgctcgggc | aaccggccga | ccggggccctc | gtcgtgccac | gagtcgtgca | | | | | | | | | | | 76834 |
| ggacgcccgc | cagcgggtcg | ccacgcatgc | cgctgaccag | ccgggagaag | tccaacgggg | | | | | | | | | | | 76894 |
| acagctcgcc | gccgaggggtg | aacacgttgt | ccggcgggcg | ctcctcggcc | gtccacgacc | | | | | | | | | | | 76954 |
| ggcgggccag | ccggggcagg | tgcggcagca | gcacaccag | gcaggcccg | cgggacacgt | | | | | | | | | | | 77014 |
| gcgcgaagga | ggcgggcgcg | gcgtcgcgga | ccagcttctg | gaacatcgcg | tacgggccct | | | | | | | | | | | 77074 |
| gccgcagata | accctgcgcg | cccagcaccg | agcgcagatc | gtcgatcgcg | tccagcacga | | | | | | | | | | | 77134 |
| tctgcgcggt | caggtacttc | acggcgggcg | cgtaaccggc | cgtggccctcc | ggcagcaggt | | | | | | | | | | | 77194 |
| gcagcgcccc | caggcccacg | cccgagaaga | cgtcgacggt | gagcagggca | gcataggcg | | | | | | | | | | | 77254 |
| gcgcgatggt | ggtgcgcacg | tacggcaggt | cggcgacggc | ggccccgtac | agccggcgct | | | | | | | | | | | 77314 |
| ccatcgccat | ctcggtggcc | agccgcaccg | cgctgtccag | cgggcccacc | agcagggccg | | | | | | | | | | | 77374 |
| gcgacaccat | ccgggtgacc | tgataggccc | gcagcgccac | ctcgatgccg | tgccctgtt | | | | | | | | | | | 77434 |
| cgcccaacag | cgcgaggagc | ggcacccggc | agtcgtcgaa | gaccagcccg | cccaggtcga | | | | | | | | | | | 77494 |
| tgccgcgcat | cccgtgccc | ggatacccg | ggcggtccac | cgcccgcgcg | ggcggcagct | | | | | | | | | | | 77554 |
| cgtcgcgcac | cagcaggaac | tggtgtgcg | accggctgcc | gcgcgcctcg | ccggtgcggg | | | | | | | | | | | 77614 |
| cgaacagcac | catcgccctg | gcccggcgca | ggttcgtcac | gatctccttg | tgcccggaca | | | | | | | | | | | 77674 |
| gcaccatcc | gccgcccggc | ggcgggggcg | cgcactcggc | ggcgggagaag | tcggtgccgt | | | | | | | | | | | 77734 |
| gcgcgagctc | gtggaacg | gccgcgatgc | gcttggtggc | cagcagcagg | ccggccgccc | | | | | | | | | | | 77794 |
| ggcgccggtg | ctcctcggtg | ccggcgccac | acacgttcac | cgaggcgatg | agcgagctga | | | | | | | | | | | 77854 |
| agccgtagcc | cagccccagg | caagggtcgc | gccgccagac | cgcgcgcgagc | acctcgcca | | | | | | | | | | | 77914 |

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|-------------|-------------|------------|------------|-------------|------------|-------|
| gccggtcggc | gcggggccagc | cgcccgccgt | acgccaccgg | cacgaactcg | gcgttgagct | 77974 |
| gatagcggtc | gagcagccgc | tcgccctcgg | ccagcatctc | ctgccgctcg | tcggcgggcg | 78034 |
| gcacggccgc | atagccgacc | gggttgccgg | ggtcgccggc | gtcgccgagc | agcttctcga | 78094 |
| gcgccgcggc | ggtcaccggc | cgctctccgc | ccggacggtg | ccggcgggcg | gccgcagggc | 78154 |
| cgtgccgaac | ggggtcaccg | gttcaccggg | gcgtgcccgc | gccgcgaccc | gcgcggccag | 78214 |
| cagccggctc | gcgccgtcgt | cgtgcggggc | gggatcgggc | gccggcgccc | gcagcaccgc | 78274 |
| ggccagctcc | cgggcgacgg | cacgcagcgc | ggccagcacc | cacaggccgt | ccgccagag | 78334 |
| cggttcgcgc | gtgtgccggc | cctccgcga | ggtccacagc | agcaggcacg | ccgcgcccgc | 78394 |
| gtagcaccac | tcgtaggcgg | cgccagctc | gtggcccacc | atggacggcc | gggcccaggg | 78454 |
| ccgagctcgc | gtcatctgcc | cgcagatccg | ccgcgcctcg | ccggccagcg | cgcccgcggt | 78514 |
| ccggggccagc | ccgcgcgggc | caccccgga | ggcgcccgac | acggcgagcg | ccggcagcgc | 78574 |
| ctgcaccacc | gagcaccgcg | ggcgggagag | cagggtcagg | gcgccgcggg | ccagcgggcg | 78634 |
| tggcggtga | ccggccgcgc | tcgcctcggc | cagcccctcg | gcggagacgg | cgccggccgc | 78694 |
| gaagccggcc | gcgagccgcg | ggaactgggt | cgccagcgcc | gtgcggacga | ccgggggtgt | 78754 |
| gccgtcgaa | accgcgacca | cgtggtgggc | gcgcaccagc | ttgggggaaca | tgccgtgctc | 78814 |
| gtactcgta | cgcaggaagg | accgcgagcc | gagcagttcg | gccagctcac | gcagcacgcg | 78874 |
| gtccaccacc | gtgggcacgt | acgccttgac | gatecccgac | gtcacgctca | tctcgcccg | 78934 |
| gaggctgtgc | accgagcgcg | tgccgacgac | ggcggtcgcc | tcggccgcgg | cgagcagggc | 78994 |
| ggcgagcgc | gccagaatcc | cgcccggggt | gccccggctg | agcagcgggc | gccgcatgat | 79054 |
| catccgctgg | gccacgaagc | ggcgggtcag | ccgcagcgcg | cggtcgccgg | cgcccgagca | 79114 |
| cagcccgggc | cacatgggtg | gggtcagctg | cagcgagcgc | agcaccgctc | ccagcccgct | 79174 |
| tccggcccgc | ccgagcaggg | ccgtgccggg | caggccggcg | tcctcgaaac | cgatgccgga | 79234 |
| gatgtcgatg | ccccgcaccc | cgtgcgtggc | caccttgggc | cggggcagcc | acgtgccggg | 79294 |
| ggcgagcgcc | tccttgctga | ccaggaacag | gctctgcccg | cgggcgctgc | cgcccgggcc | 79354 |
| ggtgcggggc | agcacgggtg | ggtatcgggc | ccgggtcgcg | ttgttgatcg | gccacttgag | 79414 |
| accgcgcagc | cggtagccgg | cgctcgtggg | cagggccgtg | gtcgtgccgt | gcagcaggtc | 79474 |
| ggcgccgctg | tcgggctcgg | agagcgccca | tgcgaccggg | gtgccggcga | gcaccgcggc | 79534 |
| ggcaagcgtc | gcgcgctggc | cgctcgtacc | ggccagccag | accggcgccg | acccgaggta | 79594 |
| ggtcttgccg | tgccgcagcg | ccgcgctcag | gtcgcgccgg | gcgaccgcac | gccacaggtg | 79654 |
| caggagccgc | tcgtggctgc | cgggggcacc | gccccactcc | ggcggtacgt | accaggattg | 79714 |
| cagaccgaag | gagttcagcc | ggtcgtgcag | ccgggcgggg | aactcctcgg | cgatgtcgcg | 79774 |
| ggcgcccgct | tcggcgctcc | atgcgtcctc | ggggccgagc | aggtcgtcca | ggcgcacctc | 79834 |

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| | | | | | | |
|-------------|------------|-------------|-------------|------------|------------|-------|
| cgcggttggc | gccagcgggc | gtacgggtcat | cgccccgcgc | ccgcctgcac | cgcccgagc | 79894 |
| gccggctcga | gctcggcgtg | cagcgccgtg | atgccgcgg | ccaggaaccg | ctcggggacc | 79954 |
| gcgggtccgc | ggatcttgcc | gctcgtggtc | cgggcgaccg | tgccgcgccg | caccagcagc | 80014 |
| acgttgcgta | ccggcacgcc | gaaggagacg | gtgagccggc | ggctgacggc | gctcgccacc | 80074 |
| cgcggcagct | cgtcgagcgg | cgtgcgcgga | tgcacctcct | gcaccagcac | gatccgctcg | 80134 |
| tcgggcgcgc | gcaccccgaa | cgccgcggcg | atctggtggt | ccaccgcgtc | gtgcgcggcc | 80194 |
| cgggcctccc | gctcgaggtc | gtgcggggcc | aggttgccgc | cgtgcacgat | gagcagctcc | 80254 |
| ttgaggcgtc | cggtgaggaa | cagctcgctt | ccggtcagcg | caccaggttc | acccgttcgc | 80314 |
| acccagccgc | cgtcctggcc | gtcgcccgcg | ggcctggcgt | cgaagatgcc | ggggttgagc | 80374 |
| tcggctcctgc | cccagtagcc | ggcgcccgcg | ccgggcccgc | gcagccagat | ctcgccgacc | 80434 |
| cgccctcctcg | gcagcggccg | tagcccgctc | gggtcgacga | tgagcacctc | gaagtcgggc | 80494 |
| acccggccga | cacccggtat | ctcccggggc | gcggcggggt | cgcccgggcg | cagggccggc | 80554 |
| gacgcggcgt | cctccagcgc | gcgagggtcg | gcgggaagaa | agaccgccgg | cgcctcgaag | 80614 |
| accttcgtcg | acacgtacgc | ggtgaactcg | gccatgccgt | agcaggggtt | caccgcgtgg | 80674 |
| gtgtgcaggc | cgaagggggc | gaagcgctcg | gtgaacgccc | ggacgggtgg | cgggttgacc | 80734 |
| ggctccgata | cgttgtagag | cgtgcgggat | cgggacaggc | cgaggccggc | gatctgctcg | 80794 |
| tcccgcacgg | cgcgcacgca | caggtcgtac | gcgaagttgg | gcgcggcgga | gatggtgacc | 80854 |
| cggtagcggc | ccatcatccg | cagccagtc | gccggccggc | ggacgaaggc | cgtcggcgac | 80914 |
| atcagcacga | cgccggcgcc | gttcagcagg | cccgcgggtga | gcatggcgaa | caggcccatg | 80974 |
| tcgtggtgca | gcggcagcca | gctgccgaac | acgtcgtcgc | tgttggtgcc | gctgctgcgg | 81034 |
| tcgaacgcgc | ggagggttgg | cagcacggcc | cggtggctga | gcatcacgcc | cttgggcgag | 81094 |
| ccggtggagc | ccgagctgta | ctgcaggacg | gccagcgagt | ccggccgggg | cccgcggggc | 81154 |
| gggcgggatcg | cttcgcggcg | gaggggcgga | agcgcaccga | ccggcaggcc | ggacaggccg | 81214 |
| cgtcgcgcga | ggacggcggt | gagcggcgcc | gcgtcgtcgg | cgttgacgac | ggccaggggc | 81274 |
| ggggagcagt | cgcccgcgat | gccgacgggt | cgtcggagg | cgccggacga | ccctccgggc | 81334 |
| gggggcgcgc | gcacggcgac | caggccggcg | tagaggcacg | ccaggtagag | ctcgacgaac | 81394 |
| tcgggcgcgc | tgggcagggc | gatgaggatg | cgtcccccg | ccgggaaccg | ggcggcgagc | 81454 |
| caggccgccc | gcgcgcggc | gcggcggtcg | agctcggcgt | acgtgagggt | gacgggctcg | 81514 |
| gcgtccgggt | cgccggggag | caccacgagg | gcgggctcgc | cggggcgcgc | gatcgctcgc | 81574 |
| gcccggaagg | cgtcgggaac | ggtgggttgg | gtggcgggcgt | cgatgaccat | ggcaactgcc | 81634 |
| tctccggaag | ggtccgccag | ggccgcgacg | ccgcggcgcg | gtcgcgctca | gctctgcggc | 81694 |
| tgcttctgct | tctccatcgc | cgcgatcagg | ctcttggggc | gcatgtcggt | ccaggacttc | 81754 |

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tcgatgtagt cgaggcagtc ctgccgtccg gcctcgccga acaccgtcgt ccagccgtcg 81814
ggcacgtcgg cgaagaccgg ccagagttag tgctgtccct cgtcgttgac caggaccagg 81874
tagttggcgt cgggatcttc aaacggattg ggcacagcgt cgctccatc gaacggatcg 81934
gatgacgggtg gtcaggagcc gcacggccgg cggttggcgc caccgccagc actatggccg 81994
agactcggaa cggccgacaa gcgtgcacgg gctgtgcgac tgcgcgcgcg gcgcgggttg 82054
acagcgggtca gagcggggccg cggccggccc gcaggagcat gagcgcgatg gtcgtgccat 82114
cctcgccgag cgcggcgcgg aagcgttga tgacctctg ctcccgggag agcaccaccc 82174
gggttcgcgc ggaggccagc cggatggagc cgatcttctg cgagatcgag gccctttcct 82234
gccacagccg catgatggcg gcgtcgatct cgtcgatgcg gttccgcagg accgggatgt 82294
ccgcctccgg caccggcctcg ccgtgctcgg ccggcgggtgc gcccggcgc accgacctgaa 82354
tgacgtttct caccatcgcc gtctcctgtg agcttgtcgg tggtgactcg ggggtggcag 82414
ccgggacggt aacaccgccg cgcggccgct cgggcgcgtg cgactgaggc cgtccgtcag 82474
tcgaacgcac gctttcgtgc gcactgccca accaggccga accgctccta cagtcgccgt 82534
cgatcgagcgt cgggtgtaaca ccgtcgaaac gccggaggat gccttggccg cc

gtg gat gtc ccg agg gtg cgc ccg ccc 82613
Val Asp Val Pro Arg Val Arg Pro Pro
1 5

ggt gcc gcg ccc gcg ccg cgg cgt cgc cgg tgg cgg ttc tgg cag tgc 82661
Gly Ala Ala Pro Ala Pro Arg Arg Arg Arg Trp Arg Phe Trp Gln Ser
10 15 20 25

ccg gac ggc cag ccg gcg tgg gcc cgc ccg gcg ctg ctg ggc atc gcg 82709
Pro Asp Gly Gln Pro Ala Trp Ala Arg Pro Ala Leu Leu Gly Ile Ala
30 35 40

gcg ctg gcg gcc gtg ctg tac acg gcg aac ctc gcc cgc agc ggc tac 82757
Ala Leu Ala Ala Val Leu Tyr Thr Ala Asn Leu Ala Arg Ser Gly Tyr
45 50 55

ccc atg tac tac gcc gtg gcg gtg aag agc atg tgc gtg agc tgg ccg 82805
Pro Met Tyr Tyr Ala Val Ala Val Lys Ser Met Ser Val Ser Trp Pro
60 65 70

gcg ttc tgg acc ggc gcg ttc gac ccg gcc gcc tgc atc acg atc gac 82853
Ala Phe Trp Thr Gly Ala Phe Asp Pro Ala Ala Ser Ile Thr Ile Asp
75 80 85

aag ctc gcc ggc gcc ttc gtc ccg cag gcg ctc tcc gcc cgc gtc ttc 82901
Lys Leu Ala Gly Ala Phe Val Pro Gln Ala Leu Ser Ala Arg Val Phe
90 95 100 105

ggc ttc cac cag tgg tcc ctg gcc ctg ccg cag gcc gtc gag ggg gtc 82949
Gly Phe His Gln Trp Ser Leu Ala Leu Pro Gln Ala Val Glu Gly Val
110 115 120

atc gcc gtg ctg gtc ctc tac cgg gcg gtg cgg cgc tgg cac ggg ccc 82997
Ile Ala Val Leu Val Leu Tyr Arg Ala Val Arg Arg Trp His Gly Pro
125 130 135

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| ggc | gcc | ggg | ctg | gcc | gcg | gcc | ggg | ctg | ttc | gcc | acg | acg | ccg | atc | gtg | 83045 |
| Gly | Ala | Gly | Leu | Ala | Ala | Ala | Gly | Leu | Phe | Ala | Thr | Thr | Pro | Ile | Val | |
| | | 140 | | | | | 145 | | | | | 150 | | | | |
| tcc | tcg | atg | ttc | ggc | cac | tcc | atg | gag | gac | ggg | gcg | ctg | acg | ctc | tgc | 83093 |
| Ser | Ser | Met | Phe | Gly | His | Ser | Met | Glu | Asp | Gly | Ala | Leu | Thr | Leu | Cys | |
| | | 155 | | | | | 160 | | | | 165 | | | | | |
| ctg | gtg | ctc | gcg | gcc | gac | gcg | ttc | ggc | gcg | gcg | gtg | acc | cgc | ggc | agc | 83141 |
| Leu | Val | Leu | Ala | Ala | Asp | Ala | Phe | Gly | Ala | Ala | Val | Thr | Arg | Gly | Ser | |
| 170 | | | | | 175 | | | | | 180 | | | | | 185 | |
| ccg | gcc | cgg | ctg | gcg | ctc | gcg | ggc | gcc | tgg | atc | ggg | ctc | ggc | ttc | cag | 83189 |
| Pro | Ala | Arg | Leu | Ala | Leu | Ala | Gly | Ala | Trp | Ile | Gly | Leu | Gly | Phe | Gln | |
| | | | | 190 | | | | | 195 | | | | | 200 | | |
| gcg | aag | atg | atg | cag | gcg | tgg | ctg | gtg | ctg | ccg | gcc | ctg | gtc | gtc | acc | 83237 |
| Ala | Lys | Met | Met | Gln | Ala | Trp | Leu | Val | Leu | Pro | Ala | Leu | Val | Val | Thr | |
| | | | 205 | | | | 210 | | | | | | 215 | | | |
| tat | ctc | gcc | ggc | gca | ccg | gtg | cgg | gcg | cgg | gcc | cgg | gtc | gtc | cat | gtc | 83285 |
| Tyr | Leu | Ala | Gly | Ala | Pro | Val | Arg | Ala | Arg | Ala | Arg | Val | Val | His | Val | |
| | | 220 | | | | | 225 | | | | | 230 | | | | |
| gcg | gcg | gcg | gtg | gcg | gcg | acc | ctg | gcg | gtc | tgc | ctg | ctc | tgg | gtg | ctg | 83333 |
| Ala | Ala | Ala | Val | Ala | Ala | Thr | Leu | Ala | Val | Ser | Leu | Leu | Trp | Val | Leu | |
| | | 235 | | | | 240 | | | | | 245 | | | | | |
| gcg | ctg | acc | ctg | ctg | ccc | ggc | tgc | cac | cgg | ccg | tgg | gcg | gac | ggc | acc | 83381 |
| Ala | Leu | Thr | Leu | Leu | Pro | Gly | Ser | His | Arg | Pro | Trp | Ala | Asp | Gly | Thr | |
| 250 | | | | | 255 | | | | | 260 | | | | | 265 | |
| acc | tcc | ggc | aac | gcc | ttc | gcc | atg | gtg | ttc | ggc | tac | aac | ggg | ttc | gac | 83429 |
| Thr | Ser | Gly | Asn | Ala | Phe | Ala | Met | Val | Phe | Gly | Tyr | Asn | Gly | Phe | Asp | |
| | | | 270 | | | | | | 275 | | | | | 280 | | |
| cgg | gcc | ggc | atc | cac | gtg | ccg | ggc | gcg | ctg | acg | acc | ggc | ttc | acc | gac | 83477 |
| Arg | Ala | Gly | Ile | His | Val | Pro | Gly | Ala | Leu | Thr | Thr | Gly | Phe | Thr | Asp | |
| | | | 285 | | | | | 290 | | | | | 295 | | | |
| ggc | ggg | gcc | gcg | gcc | ggc | ggg | tcc | tgg | acg | gcg | ctt | gcc | gcg | gat | cgc | 83525 |
| Gly | Gly | Ala | Ala | Ala | Gly | Gly | Ser | Trp | Thr | Ala | Leu | Ala | Ala | Asp | Arg | |
| | | 300 | | | | | 305 | | | | | 310 | | | | |
| ctc | gcc | acc | cag | atc | ggg | tgg | tgg | tac | ccg | ctg | gcg | ctg | acc | ggc | ctg | 83573 |
| Leu | Ala | Thr | Gln | Ile | Gly | Trp | Trp | Tyr | Pro | Leu | Ala | Leu | Thr | Gly | Leu | |
| | | 315 | | | | 320 | | | | | 325 | | | | | |
| ctg | ctc | ggc | ctg | gcc | cgg | tgg | cgc | acc | gcg | cgc | gcc | ggc | ctc | ctg | ttc | 83621 |
| Leu | Leu | Gly | Leu | Ala | Arg | Trp | Arg | Thr | Ala | Arg | Ala | Gly | Leu | Leu | Phe | |
| 330 | | | | | 335 | | | | | 340 | | | | | 345 | |
| tgg | gga | ctg | tgg | ttg | ctg | acg | gcc | gcg | gtg | gtg | ctc | agc | cgg | atc | acc | 83669 |
| Trp | Gly | Leu | Trp | Leu | Leu | Thr | Ala | Ala | Val | Val | Leu | Ser | Arg | Ile | Thr | |
| | | | | 350 | | | | | 355 | | | | | 360 | | |
| att | cag | cac | aac | gcc | tac | ctg | gcc | gtg | ctg | gcc | ccg | ccg | ctg | gcg | gcg | 83717 |
| Ile | Gln | His | Asn | Ala | Tyr | Leu | Ala | Val | Leu | Ala | Pro | Pro | Leu | Ala | Ala | |
| | | | 365 | | | | | 370 | | | | | 375 | | | |
| ctc | gcg | gcg | gcc | ggc | gcg | gtg | cag | ctc | tgg | cgc | acg | cac | cgc | gac | ggc | 83765 |
| Leu | Ala | Ala | Ala | Gly | Ala | Val | Gln | Leu | Trp | Arg | Thr | His | Arg | Asp | Gly | |
| | | 380 | | | | | 385 | | | | | 390 | | | | |

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| | |
|---|-------|
| acg gcg ccc tgg ctg ctg ccc gcg gtc gtg gtc gtc cag gcc ggc tgg | 83813 |
| Thr Ala Pro Trp Leu Leu Pro Ala Val Val Val Val Gln Ala Gly Trp | |
| 395 400 405 | |
| acc ctg tgg ctg gcc acc cgc tat ccc tcg ttc ctg gcc ggg ctg acg | 83861 |
| Thr Leu Trp Leu Ala Thr Arg Tyr Pro Ser Phe Leu Ala Gly Leu Thr | |
| 410 415 420 425 | |
| tgg acg gcg ccg atc gcc gcc gtc ctg gcc gtg gtg gtg ctg gcc gcg | 83909 |
| Trp Thr Ala Pro Ile Ala Ala Val Leu Ala Val Val Val Leu Ala Ala | |
| 430 435 440 | |
| cgg ccg acg gcc ccg ccg ccg gcc gtc gtc gtg gtg gtc gcc ggc ctg | 83957 |
| Arg Pro Thr Ala Arg Arg Pro Ala Val Val Val Val Val Ala Gly Leu | |
| 445 450 455 | |
| ctg gcg gtg ccg gtc gcg tgg ggc gcc tcg gtg ctg aac ccg cga tac | 84005 |
| Leu Ala Val Pro Val Ala Trp Gly Ala Ser Val Leu Asn Pro Arg Tyr | |
| 460 465 470 | |
| gcc ggc acg tcg ttc gag gcc ggt gcg ggg ccg agc ggg ccg gtg ggc | 84053 |
| Ala Gly Thr Ser Phe Glu Ala Gly Ala Gly Pro Ser Gly Pro Val Gly | |
| 475 480 485 | |
| gtg ccg ctc gac gac gac acc acc gac ccg ctg acg ccg ggc ctg cgc | 84101 |
| Val Arg Leu Asp Asp Asp Thr Thr Asp Arg Leu Thr Pro Gly Leu Arg | |
| 490 495 500 505 | |
| agg ctc gac gac tat ctc gcg gcc cac cgc gac ggc cgc acc tac ctg | 84149 |
| Arg Leu Asp Asp Tyr Leu Ala Ala His Arg Asp Gly Arg Thr Tyr Leu | |
| 510 515 520 | |
| gcg gcc acg tcc tcg tgg cgc acg gcc ggc ccg ctc atc gtc ccg acc | 84197 |
| Ala Ala Thr Ser Ser Trp Arg Thr Ala Gly Arg Leu Ile Val Pro Thr | |
| 525 530 535 | |
| ggg cac tcc tac ctg ccg ctc ggc ggc ttc agc gga gcg gcg ccg ttc | 84245 |
| Gly His Ser Tyr Leu Pro Leu Gly Gly Phe Ser Gly Ala Ala Pro Phe | |
| 540 545 550 | |
| ccg tcg ctg gcc ggc gtg cag cgc ctg gtc cgc gac ggc gag ctg cgc | 84293 |
| Pro Ser Leu Ala Gly Val Gln Arg Leu Val Arg Asp Gly Glu Leu Arg | |
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| tac ttc gtc ctc ggc ggc ccg gag ggc ctc ggc ggc gag gcc acc gag | 84341 |
| Tyr Phe Val Leu Gly Gly Pro Glu Gly Leu Gly Gly Glu Ala Thr Glu | |
| 570 575 580 585 | |
| gcg tac cgc atc acc ggc tgg gtc ctc gag acg tgc gcc acc gtg ccg | 84389 |
| Ala Tyr Arg Ile Thr Gly Trp Val Leu Glu Thr Cys Ala Thr Val Pro | |
| 590 595 600 | |
| ccg gcc gag cac ggc gcc gat ccg gat ctc acg gtc ctg cga tgc gac | 84437 |
| Pro Ala Glu His Gly Ala Asp Pro Asp Leu Thr Val Leu Arg Cys Asp | |
| 605 610 615 | |

aag ccc
Lys Pro

tga caaccgacgt agcacgacga acccgggagg aaca

APPENDIX A

| | |
|---|-------|
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| gcg gtc gcg gac gtc gaa tcc gcc agc gcc ccg ttt acg gag ggc tac Ala Val Ala Asp Val Glu Ser Ala Ser Ala Pro Phe Thr Glu Gly Tyr 20 25 30 | 84576 |
| ggc ttc tcg gtg tac ggc ggg acc ggc gac gcg cac gcg ccg gtg cgg Gly Phe Ser Val Tyr Gly Gly Thr Gly Asp Ala His Ala Pro Val Arg 35 40 45 | 84624 |
| cgg gtg gcg ctg gga cgc gac gac atc cgg ctc gtg ctg acc gcg gcg Arg Val Ala Leu Gly Arg Asp Asp Ile Arg Leu Val Leu Thr Ala Ala 50 55 60 | 84672 |
| ccc ggc ggg gac cat ccg gcc atg gcc tac gtc gag cag cac ggc gac Pro Gly Gly Asp His Pro Ala Met Ala Tyr Val Glu Gln His Gly Asp 65 70 75 80 | 84720 |
| ggt gtg tcg gcc atc gcg ctc agc acg aga gac gcc cac gcg gcg ttc Gly Val Ser Ala Ile Ala Leu Ser Thr Arg Asp Ala His Ala Ala Phe 85 90 95 | 84768 |
| acc gag gcg gtg cgg cga ggc gcc gtc ggg gta tcc gcc ccg gtc acc Thr Glu Ala Val Arg Arg Gly Ala Val Gly Val Ser Ala Pro Val Thr 100 105 110 | 84816 |
| ggc aac ggc gtg acc gtc gcg acc atc cgc gcc ttc ggt gac gtc ctg Gly Asn Gly Val Thr Val Ala Thr Ile Arg Gly Phe Gly Asp Val Leu 115 120 125 | 84864 |
| cac acc ttc gtc gag cgg gcg ccg ggc gcg gac ccc cgg acc ctg ccc His Thr Phe Val Glu Arg Ala Pro Gly Ala Asp Pro Arg Thr Leu Pro 130 135 140 | 84912 |
| ggc ctg gag ctg cgg cgg ccc agc ccc acc cgg ttc gac tcg ggc ctg Gly Leu Glu Leu Arg Arg Pro Ser Pro Thr Arg Phe Asp Ser Gly Leu 145 150 155 160 | 84960 |
| cag gcg atc gac cac atc gcc gtc tgc ctc gag ccg ggg acc ctc gac Gln Ala Ile Asp His Ile Ala Val Cys Leu Glu Pro Gly Thr Leu Asp 165 170 175 | 85008 |
| ccg acc gtc gac ttc tac cgc gac gtc ctc gac ttc gag atg atc ttc Pro Thr Val Asp Phe Tyr Arg Asp Val Leu Asp Phe Glu Met Ile Phe 180 185 190 | 85056 |
| gag gag cgc atc ctg gtg ggc cgg cag gcg atg gac tcc aag gtg gtg Glu Glu Arg Ile Leu Val Gly Arg Gln Ala Met Asp Ser Lys Val Val 195 200 205 | 85104 |
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| tcg ctc gag cag ggc cag atc gac acc ttc ctg aag aac cac ggc ggg Ser Leu Glu Gln Gly Gln Ile Asp Thr Phe Leu Lys Asn His Gly Gly 225 230 235 240 | 85200 |
| ccg ggc gtg cag cac ctc gcg ttc atc acc gac gac gtg ctg cgc tcg Pro Gly Val Gln His Leu Ala Phe Ile Thr Asp Asp Val Leu Arg Ser 245 250 255 | 85248 |

APPENDIX A

| | |
|---|-------|
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| tcg tac tac ggc cgg cta ccg ggg cgc atc ccg cag gcc ggg cac ccg Ser Tyr Tyr Gly Arg Leu Pro Gly Arg Ile Pro Gln Ala Gly His Pro 275 280 285 | 85344 |
| atc cag gcg ctg cgc gac ctg aac gtg ctc gtc gac cag gac cac gac Ile Gln Ala Leu Arg Asp Leu Asn Val Leu Val Asp Gln Asp His Asp 290 295 300 | 85392 |
| ggg cag ctg ttc cag atc ttc acg aag tcg gtg cac ccc cgc ggg acg Gly Gln Leu Phe Gln Ile Phe Thr Lys Ser Val His Pro Arg Gly Thr 305 310 315 320 | 85440 |
| atc ttc atg gag gtg atc gag cga atg ggc gct cgc agc ttc ggc agc Ile Phe Met Glu Val Ile Glu Arg Met Gly Ala Arg Ser Phe Gly Ser 325 330 335 | 85488 |
| ggc aac atc aag gcg ctg tac gag ggc gtc gag ctc gac atg tcc aag Gly Asn Ile Lys Ala Leu Tyr Glu Ala Val Glu Leu Asp Met Ser Lys 340 345 350 | 85536 |
| cag agc gcc Gln Ser Ala 355 | |
| tga gccgccg | |
| atg 85558 Met 1 | |
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| cgg cgg ctg cgc cag ccc gcg gtg atc ggg gag atc ctc gcg ggc atc Arg Arg Leu Arg Gln Pro Ala Val Ile Gly Glu Ile Leu Ala Gly Ile 35 40 45 | 85702 |
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| tgg ctc ttc ccg gcc gag gcc cgg ccg tac ctg tcc gcg gtg gcc cag Trp Leu Phe Pro Ala Glu Ala Arg Pro Tyr Leu Ser Ala Val Ala Gln 70 75 80 | 85798 |
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| gcg act ctg gcc cgg cac cgc ggc acc gcc gcc gcg gtg tcg atc ggc Ala Thr Leu Ala Arg His Arg Gly Thr Ala Ala Ala Val Ser Ile Gly 100 105 110 | 85894 |
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APPENDIX A

| 115 | 120 | 125 | |
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| ctg gcc cgg atc ctc gcg gag cgg cgc ctc acc ggc acg cgg gtg ggc Leu Ala Arg Ile Leu Ala Glu Arg Arg Leu Thr Gly Thr Arg Val Gly 165 170 175 | | | 86086 |
| agc atc gcg ctg gtc agc gcc gcg atc gac gac gtg gtg gcc tgg tgc Ser Ile Ala Leu Val Ser Ala Ala Ile Asp Asp Val Val Ala Trp Cys 180 185 190 | | | 86134 |
| ctg ctg gcc ctg gtg acg gcc atc gcc acg gcg agc ggg ccg gtc cag Leu Leu Ala Leu Val Thr Ala Ile Ala Thr Ala Ser Gly Pro Val Gln 195 200 205 | | | 86182 |
| ctc gta cgc atc ctc gcc ctg ctg gcc gtc ttc ctg gtg gtg ctg gtg Leu Val Arg Ile Leu Ala Leu Leu Ala Val Phe Leu Val Val Leu Val 210 215 220 225 | | | 86230 |
| acg gtc gta cgg ccg ctg ctg gtc ttg ctg gcg ccg ccg ccg tcc gcg Thr Val Val Arg Pro Leu Leu Val Leu Leu Ala Arg Arg Pro Ser Ala 230 235 240 | | | 86278 |
| tgc tat ctt ctg gtg gcg gtg gtc gcg gtc gtg ctg ctc tgc gca tat Ser Tyr Leu Leu Val Ala Val Val Ala Val Val Leu Leu Ser Ala Tyr 245 250 255 | | | 86326 |
| gcg acc acc tgg atc ggc ctg cac gcg atc ttc ggc gcg ttc tgc gcc Ala Thr Thr Trp Ile Gly Leu His Ala Ile Phe Gly Ala Phe Cys Ala 260 265 270 | | | 86374 |
| ggc ctg gtc atg ccc cgg gag ccg gcg gcg gcg ctg cgt gag ccg gtg Gly Leu Val Met Pro Arg Glu Pro Ala Ala Ala Leu Arg Glu Arg Val 275 280 285 | | | 86422 |
| cgg cag ccg ctg gaa cac gta agc gtg gtg ctg ctg ccg gtg ttc ttc Arg Gln Pro Leu Glu His Val Ser Val Val Leu Leu Pro Val Phe Phe 290 295 300 305 | | | 86470 |
| atc gtc acc ggc ctc ggc gtc gac atc ggc gcg ctc acc gcg gcg aac Ile Val Thr Gly Leu Gly Val Asp Ile Gly Ala Leu Thr Ala Ala Asn 310 315 320 | | | 86518 |
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| gcc aga acc ctc ggc ctg ctc gtc aac acg cgc gcc ctg acc gag ctc Ala Arg Thr Leu Gly Leu Leu Val Asn Thr Arg Gly Leu Thr Glu Leu 355 360 365 | | | 86662 |
| gtc gtg ctc aac gtc ggt ctg cag ctc gcc gtg ctg gac gcc cag atg Val Val Leu Asn Val Gly Leu Gln Leu Ala Val Leu Asp Gly Gln Met 370 375 380 | | | 86710 |

APPENDIX A

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| Phe Thr Met Met Val Leu Met Ala Leu Val Thr Thr Ala Leu Ala Gly | | | | | | | |
| | | 390 | | 395 | | 400 | |
| ccg ctg atc gga tcg gcc cgg aca ccg gcg gcc ggc gca ccg gct cag | 86806 | | | | | | |
| Pro Leu Ile Gly Ser Ala Arg Thr Pro Ala Ala Gly Ala Pro Ala Gln | | | | | | | |
| | | 405 | | 410 | | 415 | |
| gcg ctc ccg gcc gaa ccg cgg acg cgg cgg gcg gcg | | | | | | | |
| Ala Leu Pro Ala Glu Pro Arg Thr Arg Arg Ala Ala | | | | | | | |
| | | 420 | | 425 | | | |
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| agcaccagcg ccgcgcctgg ttgcgggagg cgtcgtagta ggcccaccgg caggtgtccc | 86945 | | | | | | |
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| gtg gcc acc acg ctg agg gac gtg gca cgg ctc gcc | 87529 | | | | | | |
| Val Ala Thr Thr Leu Arg Asp Val Ala Arg Leu Ala | | | | | | | |
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| cgg gtg tcg gtg aag acg gtc tcc aac gtc gtc aac gac cac ccg cac | 87577 | | | | | | |
| Arg Val Ser Val Lys Thr Val Ser Asn Val Val Asn Asp His Pro His | | | | | | | |
| | | 15 | | 20 | | 25 | |
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| Val Ser Asp Asp Val Arg Arg Arg Val Glu Thr Ala Ile Arg Gln Leu | | | | | | | |
| | | 30 | | 35 | | 40 | |
| ggc tac cgt ccc aac ctc gtc gcc cgc gcc ctg cgc agc ggc cgc ggc | 87673 | | | | | | |
| Gly Tyr Arg Pro Asn Leu Val Ala Arg Ala Leu Arg Ser Gly Arg Gly | | | | | | | |
| | | 45 | | 50 | | 55 | |
| agc gga ctg ctc gcc ctg gcg atg ccg ggc gcc ggc gcg ccg cag tcg | 87721 | | | | | | |
| Ser Gly Leu Leu Ala Leu Ala Met Pro Gly Ala Gly Ala Pro Gln Ser | | | | | | | |
| | | 65 | | 70 | | 75 | |
| ccc gcc ctg atc gag gag atc atc cgg cgg gcg gcc ccg ctc gga ttc | 87769 | | | | | | |
| Pro Ala Leu Ile Glu Glu Ile Ile Arg Arg Ala Ala Pro Leu Gly Phe | | | | | | | |
| | | 80 | | 85 | | 90 | |

APPENDIX A

| | |
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| Pro Gly Val Asp Ala Arg Leu Leu Asn Ala Glu Ala Pro Ala Pro Glu | |
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| ctg gtg gac gcc cag gcg gcc acg ggc acc ccg ctg gtg ctg ctg acc | 87913 |
| Leu Val Asp Ala Gln Ala Ala Thr Gly Thr Pro Leu Val Leu Leu Thr | |
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| Gly Thr Pro Asp Pro Arg Tyr Asp Cys Val Gly Pro Asp Ala Ala Arg | |
| 145 150 155 | |
| gcg gcc gag gac gcg gtg gac cac ctg cgc cgt ctc ggc ccg cgc cgc | 88009 |
| Ala Ala Glu Asp Ala Val Asp His Leu Arg Arg Leu Gly Arg Arg Arg | |
| 160 165 170 | |
| gtc gcc acc atc ggc ggc tcg ctc tcc acc ggt ccg gcc ggc tcc ggc | 88057 |
| Val Ala Thr Ile Gly Gly Ser Leu Ser Thr Gly Pro Ala Gly Ser Gly | |
| 175 180 185 | |
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| Ser Asp Phe Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly | |
| 190 195 200 | |
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| Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly | |
| 205 210 215 220 | |
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| Phe Gly Ser Gly Ser Gly Phe Gly Ser Gly Ser Ala Glu Gly Tyr Arg | |
| 225 230 235 | |
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| Ala Ala Arg Gln Leu Leu Gly His Glu Asp Arg Pro Asp Ala Ile Val | |
| 240 245 250 | |
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| Cys Gly Ser Val Arg Leu Ala Val Gly Val Ile Arg Ala Ala Ala Asp | |
| 255 260 265 | |
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| Ala Gly Leu Arg Val Pro Glu Asp Val Ala Val Ile Gly Ile Gly Asp | |
| 270 275 280 | |
| ggc gag gag ggc cgc tac acg ccg ccg gcc ctg acc acg gtc gcc acc | 88393 |
| Gly Glu Glu Gly Arg Tyr Thr Arg Pro Ala Leu Thr Thr Val Ala Thr | |
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APPENDIX A

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APPENDIX A

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| cagcccgaac | accacgtcga | aggcgacacc | ggcccgcggg | gccggccttg | ctgaagtagt | 1920 |
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| ctcaccgccc | acgggaccgg | gctcgacaag | gccacgtacc | gcaaagtgcgt | gaccgacccc | 2880 |
| ccggccgtct | cgggcggagc | tcccggcgtc | ggcggcaccg | tcgcctgcct | ggcgcacctc | 2940 |
| gatctgcacg | tcgaggtggc | ctaccagccc | aacgaccggt | actggacctt | ccagtggatc | 3000 |
| gagtcggccc | tctacctggc | gctcgggtga | ctgctcctcg | ccgtgggcct | gtggcgcatc | 3060 |
| cgcgcgcacg | tcattctgatc | gtccccccgt | ccgcacggat | tcgaaggata | gaaagacatg | 3120 |
| ccacacgagg | attcctcgcc | cgttctgcag | gcggagggct | tgaccaaacg | ctacggtcgg | 3180 |
| cgcaccgccc | tgcaggactg | caacctgacc | attccgcgcg | gccgggtgat | cggcctggtc | 3240 |
| ggcccgaacg | gcgcgggcaa | gtcgacgctg | ctccagctgg | cctgcgggct | gatcacgcgg | 3300 |
| tcggagggct | cgtgcgcgt | gctcggcgag | acgcggccg | cgaacgcggg | ccacctcgcc | 3360 |
| aaggctcggt | tcgtcgcaca | ggacaccccg | gtctacagca | acttcacggt | cggcgaccac | 3420 |
| ctgaagatgg | gtgccaagct | caaccgcacg | tgggaccagg | cgtcgcgcga | gcgcgcgctc | 3480 |
| gcgcaggctg | ggctcaacca | cggccagaag | gcgggcgggc | tctcggcgcg | tcagcgcgcc | 3540 |

APPENDIX A

| | | | | | | |
|------------|------------|------------|------------|------------|-------------|------|
| cagctcgccc | tgacgcttgc | cgccgccaag | cgcccggaac | tgtgatggt | cgacgagccg | 3600 |
| gccgcccgcg | tcgacccgct | ggcccgcgac | ggcttcctgc | agaacctgct | cgagttcgtc | 3660 |
| accgagctcg | acgccagcgc | gacccgtgct | tcgcacctgc | tcggcgacgt | cgagcgcgtc | 3720 |
| tgcaactacc | tgatcgtgct | ctgcgcctcc | cgggtgcagg | tcgcccgcga | cgttcccgcg | 3780 |
| ctgctcaaca | cgcactaccg | catcgctcg | ccccgcggcg | agctggacca | tccgcggggc | 3840 |
| ggcctcgagg | tcatccgggc | gcagcacgcc | gaccggtaca | ccaccgccgt | cgtgcgcggc | 3900 |
| gacggcgacc | ggccgagcac | ctggacgate | gagcccatcc | agctcgagga | gctcgtgctg | 3960 |
| gcgtacatga | cgcgggggat | gggcgtcacc | ggcgagccgc | tgatggccgc | gtccggggag | 4020 |
| gtcgtccgtt | gatctggatg | agctggcggc | agttccgcgg | tcaggccgtc | gtccggggtc | 4080 |
| tcgtgctggc | cctgctcgcc | gcatacctgg | tctacctcgg | cgtcgacatc | cgcggcgccct | 4140 |
| acgacgacta | tcggggcgag | tgcgcccggg | ggcgcgactg | cgcggggccc | ctggggccagt | 4200 |
| tcagcctcga | ctacgagaac | acgttgcctt | atctggccgg | cgtgctggcg | ctggtgcccg | 4260 |
| gcctgctcgg | catgttctgg | ggcgcgcccc | tgatcacccg | ggagctggag | aacggcaccc | 4320 |
| agcgccctgt | gtggaaccag | agcgtgaccc | gccgcgcgat | gctgctgate | aagctactcg | 4380 |
| tcgtgggctt | ggcctgcatg | gtggtggccg | gggtgcccag | cctgctgctg | acctggggcg | 4440 |
| ccgcgcgggt | cgacaatgtg | gccgacaacc | ggttcagcac | gggatgttcc | ggagcccgggt | 4500 |
| tcctgcgcgc | gategcctac | gccgccttcg | cgttcgtgct | cggcacgctc | atcggcctgc | 4560 |
| tggtcgcgcg | gacggtgccc | gcgatggcgc | tcacgctcgt | ggcgttcgtg | atcttccagt | 4620 |
| tcctggtgcc | gaacctggtg | cgcggccacc | tcatgccggc | caagcacctg | gtcaagccga | 4680 |
| tgacggtgag | cgccatcaac | gaggccaagt | cgtgggcgag | catcacccgc | gcgcgggtgc | 4740 |
| tgaacggcct | gtcgatctcg | cagggctgga | tcaccgacgt | cagcgcgctc | aagaccgcgc | 4800 |
| acggccgggt | gctggacgcg | aagacgttcg | acaactgcta | catgaacgcg | ccaagaccg | 4860 |
| gtgcgaccga | gggcccgtac | ggtgacgtcg | cggctctgct | ggccaagctg | gacctgcacg | 4920 |
| tcgacatcgc | ctaccagccg | tggaaccggg | actgggcctt | ccagttcctc | gaatcggggg | 4980 |
| tctatgtgct | gctcagcggc | ctgctgatcg | gcgcgcgggt | gtggcgcgct | cagcggcggc | 5040 |
| ccagctgaga | tgagcgcgca | cagcacccgt | accgagccgg | gcgcactcgt | ccgtggcacc | 5100 |
| cgggaagccg | ggggcgggcg | cgagcgtcgt | gccgcgggtg | ccgcctgggt | catcggcggg | 5160 |
| gcggcggtgc | ggtaccgcac | ggtgctggtg | gcgctgggaa | gccgcgcgac | cgacagcgac | 5220 |
| gaagcagttc | tcgggctggt | ctccctgcac | atcgcgagg | gacgcgacgc | accgggtccat | 5280 |
| ctgtacggcc | aggactacat | gggcatgctc | gagggccacc | tgggcgccac | gctgggtccg | 5340 |
| gcgttcggcg | ccgggggtgt | gccggtccgt | gcgcgcgtgc | tcgtcctggt | cgcgctgttc | 5400 |
| ctggctcgtc | tgtaccagct | caccgggaga | ctgtggtcgc | cgggcgctgc | ggtggcgacg | 5460 |

APPENDIX A

| | | | | | | |
|------------|-------------|-------------|------------|------------|-------------|------|
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| gggtaccg | agatcgccgt | tctcggcg | ctcctgttcc | tctcgcgg | gcggatcg | 5580 |
| cgcggggagg | tccgcgcgc | ggtgctcg | ctggccgaat | tcggtcttgc | gctgggcctc | 5640 |
| ggcgtgtcga | tgggtggccaa | cctctgccc | ggcgaccgct | gcggcactac | gagtttctgg | 5700 |
| tggccgcgga | tctgtctcgc | gtgctcg | gtgacggccg | ggccggcggt | gcgtgcgctg | 5760 |
| cggcgcgcg | ttccggagcc | ggcgccgac | cggctcgcc | cgccgacgcg | cggtcagggg | 5820 |
| ctggcgcgga | tgcggctcg | ccgctcgac | ccgcgttga | gcatgccggt | gagcgcgcg | 5880 |
| agcgctccg | cgcgcccg | atgggcctcc | agctcgcgca | gcgccgagat | ggtcgccgc | 5940 |
| agctcgcg | acaggctcgt | gagcacgtc | gcgaccgc | cggcgttggc | ggccaggatc | 6000 |
| tccgtccaca | gtgcgcgcg | accgcccgc | atccgcgtg | tgtcccgcac | gccctggccg | 6060 |
| gccaggccca | gctgggcgcg | ggtgcgctcc | agcatccgc | cgccagcag | gccggccacc | 6120 |
| aggtgcggca | cgtgcgagac | gagggccacc | gcccggtcgt | gtcctcggc | gctcatcagc | 6180 |
| accggcgtg | cgccgcaggc | cgaaaccac | gccaggccc | cgtcgacggc | ggcgggtgctg | 6240 |
| cttcgcccgc | cgggggagag | caccagggc | cgccctcga | acagcgagcc | ccgggcgcg | 6300 |
| tgcggctccg | agcgttcgct | gccggcgagg | ggatgccgc | cgacgtggga | ggaggcgtcg | 6360 |
| cagccgagca | cctcgatctg | ccgggagggc | agcactttca | cgctcgccgc | atcgggtgtgc | 6420 |
| accggggccg | ttcccgcgc | ctggagggtcg | gccagcacgg | gagcgacggc | cgccggcggc | 6480 |
| accgcgatca | cggcgacgtc | caccggggtg | cgcggtcgc | ccgcgatgcc | cgcgccgagc | 6540 |
| gccgcgcgg | cgcgcgcggc | ggcgggatcg | gcgtccagca | ggtgaacggt | gatgtcacgt | 6600 |
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| cgcacaaggg | ctcccatcgc | cgcattcgct | gttcaggccg | cgttcttctc | gagtgtttcg | 6720 |
| gcgaattcca | accactcttg | tgaacaacgc | cgggccacgt | tcgccaggac | gtacgtgcaa | 6780 |
| tgcgacggaa | ccgcgtcgag | catgtctttc | cactcatcat | cttgaaccgt | gcgggcaaga | 6840 |
| acccatcgca | aaagattg | gccggattcg | gtaaatcgca | gcgacgggtc | gttcttcaag | 6900 |
| ccttgaagta | ttgaccgcac | ggtcggtcgc | agcagccgaa | tcgtgttttc | cttgtcgaag | 6960 |
| gaaatgtcgt | cgcggtgacc | gcccgctcg | cgggggccgg | gcagcgggtc | ctcgccgcgc | 7020 |
| tgcaggcgat | tgcgcacgtc | acgcgcggtc | gagggcgata | cgccggcggt | cttggcgatc | 7080 |
| tcccgcaggg | aggcgctcgg | ctgttgctga | atgtagctga | cggccttcag | tcggccctcg | 7140 |
| gaattgtcca | gcgggcgcac | ccggccgctcc | cgcccgacgc | gggtgcgcga | gccctgccc | 7200 |
| atgtcgccg | agagctcgag | gcgcggcggt | atgttgccca | cgggtcgggc | gctgagtcg | 7260 |
| ctggaggccg | ctattgtgcg | gtctgaccag | gacggatgcg | actcgatgat | ccgttcgcgc | 7320 |
| gcgcgcgtgc | ggtccgctgt | ggacagtggc | aggccgtgcg | cgatgttcgc | cttgacgcgc | 7380 |

APPENDIX A

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| cgcagccggg | ccgcgccag | ccggtgcgcg | ccgtcgatga | cccgcattgt | tgcgcgggtgc | 7500 |
| acgatgatcg | gcggcagttc | ggcgctgagg | ctggccagca | tctgggtgtg | ccgcggatcc | 7560 |
| tgcggggcca | gccgggggtga | atcgagcatt | tccagtgaat | ccacaggtag | ccactcgacg | 7620 |
| cgcattcattg | acggagtgtt | catctgtgtt | tgcgtcgcc | gatccggctc | gtggcgcgct | 7680 |
| gacgcgatgt | gcaatgactc | cataccaacc | cccgaatggc | tggactccga | tgaccgctgg | 7740 |
| acacgatgca | ccgcagggtct | caacgagatg | ctttgacgac | cgtcggccgg | ctcggccgctc | 7800 |
| gtggccgagt | gcgcttgtgc | agcgggcttt | caatgtccga | cactaatcga | ggcggcgctg | 7860 |
| gctcgccaag | ctcgtaagag | gttctctgac | gcatttttaa | gctgtcttca | cgggtgaagtt | 7920 |
| tatcgatccc | acggtgggtc | ggtgggcgctc | gagcgggata | tgatcgccac | gatgcgtcat | 7980 |
| cgtgtccgtg | ccgttcgtac | tggtcaaccg | ggagatctcg | ggggtgccac | ggtggacgtg | 8040 |
| ccggccgggt | ccgggccgcc | ccggccgagg | gcgcggggga | cggttcgggc | cctattttctg | 8100 |
| caagttgcag | actgtgcgat | tcggtgggt | cacggccgga | gtgcccgat | ctcggctcgtg | 8160 |
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APPENDIX A

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| gtcgcgaagc | cctgactgtg | gcaccgcatt | ccgcaccgat | caatcgaagc | cacggcggtg | 9540 |
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| gtggacgggt | cggccgacgt | ccatagtggg | ccgggggctc | gctcggccgc | ctcgcggcg | 9660 |
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APPENDIX A

| | | | | | | |
|-------------|------------|-------------|-------------|------------|------------|-------|
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| agctgatccc | gttagagacc | ggccgctccg | cgggtgccgtc | ggaggaccgc | tgggccacgg | 11580 |
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| gtcggggatc | gcctcggcca | cctcggcgcc | caggtgcggc | ggcgtgatga | ggtcgtcgcc | 12960 |
| gaacgagatc | acccggcagg | gcgcggtgac | cgagcgcagg | gcggcgccgc | ggtcaccggg | 13020 |
| cagctcggcc | caggcctgcc | cgcggccga | gacgcccgtg | ccggagagct | cgaagatgtc | 13080 |
| gagccactcg | cgcacggcca | cgtcgctggt | gagcgtcgcc | ggggagaaca | tcttgaagac | 13140 |

APPENDIX A

| | | | | | | |
|-------------|------------|-------------|-------------|-------------|------------|-------|
| cgcggtcgcg | gcctcgtag | cgcgggcg | cgtgacccg | ctctccagca | ggtcgatgtc | 13200 |
| ggcctgggtc | tgcgcgcgc | gggcgcgctc | gggcggggcc | agggtcgca | tcaggaccgc | 13260 |
| gcagcgcacc | agctccggat | ggtcgacggc | cagctcctgg | gcgatcatcg | cgcccagcga | 13320 |
| gggtgccgacg | atccggcagg | gcgcgagatc | gagggcctcg | atgagaccgc | gggtgtcggc | 13380 |
| ggtcgatgtcg | gcgagggagt | acttgccggc | gggcacgtcc | gagggcgga | tgccacggct | 13440 |
| gtcgaagacg | acggtggaat | atccgcctc | gtgcaacgcg | ggcgtctggt | gcaccgtcca | 13500 |
| gggtctggccg | gccgagcccg | atcccatgat | catgagaacg | ggctcgccgg | ctccggagcg | 13560 |
| gcgatacgcc | aggcggaccc | cgttggtggt | gacgaaaccg | gagcccgcg | cgctcaccag | 13620 |
| cgccactcgc | gcttggtgaa | caggtgctcg | gcggtgaagc | cccggtcgc | gcaccacgcg | 13680 |
| aggaactcgt | cgatctgctt | gagctggtag | gtgtcctcgt | tgtaggctgt | cgccatgacg | 13740 |
| tgccctgccc | aggactcctc | gcccattggc | tagatgtatc | ggcggtggc | gccgagctcg | 13800 |
| gtcatgatcg | cgccggcctg | ctccgcgttc | gatccggaca | gccgccgtga | ggcgctcatc | 13860 |
| ttcttggtga | cgcgcttggt | cagcagtcct | ttgtagagcc | agttgagcgg | cgcgccgctg | 13920 |
| cactccatgc | cgaggaacgc | catgtcgacc | tggccgacgt | ggtcgaggat | gtagcggtag | 13980 |
| agcaccgggt | cgatgcccga | cgagtcggcg | ccgatgaaga | tgggtgcgcc | ggccatccgc | 14040 |
| acgaagtacg | tcgacttccc | gcggatgtcc | agatcggcgt | gctcgcccag | gaacggcgtg | 14100 |
| gcggtgaccg | tgccgcccgg | gaacggcacc | tcgtcgaaact | cctcgacctc | gacgacggtg | 14160 |
| aaaccgatcc | ggcgcaggta | cagcgcgac | gacgggtccg | ggaggttgcc | gcggctggtg | 14220 |
| cgcgccacga | caacggtgcc | gatccggccg | cgcagctgca | gcagggtctc | gagcacgatg | 14280 |
| tggtcctggt | gcccgtgctg | gatgagcacc | aggtcgatgt | ggtcgggcag | gtcgtcgagc | 14340 |
| gtgtaccggt | cgccgtggcg | gttgctgggtg | ctgatgaacg | ggtcgggtgac | caccgcgcgc | 14400 |
| tgctcggctc | gcataccacc | gcaggcgtga | ccgtagtagc | ggaccgggcc | gccggactcg | 14460 |
| atgtgccggt | cgggcgacag | gctcggctcg | tcggtgagca | gggcatccag | cgcgcccgcg | 14520 |
| ccggcgtcgt | cgagctccag | cgctcgcgc | aggcggttga | gcgagggtgg | ccgcacgcgg | 14580 |
| gcgtcgaaga | gctcggtcag | cccgggatgc | cgcaggggca | gcggaaggtc | gagcacgcca | 14640 |
| gcccggggaa | gccgcggtgt | gctgaggatg | aacgggcgct | ccaccccgct | gtcgagcgag | 14700 |
| agctgcaccg | actgccgcgc | ctcgtcgtag | gccgggctgc | ggtagagcag | cggtcagagg | 14760 |
| aagtgcagcg | agggtcggtt | gctggtgtcg | tacgcgatct | ccaccagccc | gttgagcgcg | 14820 |
| gccggcagcc | gggggtagag | cgccgtcagg | tcgtagccga | ccgcgttctc | gcggatcagg | 14880 |
| tcctcggcct | cgccaccgc | ggcggcgaag | ccgagcatgt | cgcccgctc | gttcttgatc | 14940 |
| gtcttgagca | gctcggcgac | ctcgtcgctg | cgggattcct | cgacggcgac | gaagtagccg | 15000 |
| ccgcgcacat | tcgggttcgt | gctcgccgc | acgtgcaccg | gcggcgactg | caggtacgac | 15060 |

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|-------------|-------------|-------------|-------------|-------------|------------|-------|
| tgcagcagag | gcacctgcag | gaacgccagg | ttcatggagg | ccggcaccgg | tgccaccgtg | 15120 |
| tgcagccacg | cgtagaaacg | gtcgacgagc | ggttcggcga | tgacgttgga | gdcaggtat | 15180 |
| ctcggctgat | cggcgttgcc | catgtgaacc | tctccatcct | gatggcgggt | gcgcccgag | 15240 |
| cgggcacgat | cgggcgggag | ggaatgcggc | ctcgggtacg | ccggcgcggc | aaacggcgcg | 15300 |
| tccgtccctc | cggcgtgggc | gcgggtccact | atggcatcgg | cccaggagcc | ggtacagcgt | 15360 |
| gcacgtgcgc | ggcccgatcg | cgtcgaacgc | cctgtacaac | cggcgggtgcg | acgcagtcga | 15420 |
| acagcgggtga | acgaccgagg | cggcggcggc | ccgttgatcg | gccgcccgag | cgcccgcata | 15480 |
| gtgaatcgcc | ggaggggcct | tggagagccg | gccgcgcgtt | cccggccatc | gccgggcgcc | 15540 |
| cgccctcaca | aaccgatcgc | ccggcgccgc | cgggtcgcac | ggaggtgccc | atgtccgaga | 15600 |
| ccgacctgtc | cgcgcgccgg | cacacgcccg | agcagatccg | ctcctggctg | atcgaccgga | 15660 |
| tgcctacta | cgtgatgctg | ccgaccagg | agatcgagcc | ggacgtgtcc | ctggccgagt | 15720 |
| acggcctgga | ctcgggtgtac | gcgttcgcgc | tctgcggcga | gatcgaggac | acgctcggca | 15780 |
| tcccgatcga | gccgacctg | ctgtgggacg | tgcacaccgt | cgccaccctc | accgccacc | 15840 |
| tgcgcgaccg | cgtcaaccga | taagccggag | gtgaccgtcg | tgcccacccc | tgacctgcgc | 15900 |
| ccgctcacgc | ccgccagct | cgcgctctgg | cacgcgcagc | agctcgcccc | gcacagcccc | 15960 |
| gtctatcagg | tggcgagtt | cgtcgagatc | gacggcgagt | gcgaccccga | tctcctggtg | 16020 |
| gcggcggttc | gtcagggtcat | gggcgaggcc | gagagcgcgc | ggctgcgggt | ccgcgtgatc | 16080 |
| gacggtaacg | cgtggcagta | cgtcgccgag | gacggcgacg | acccgatcca | ggtcgtggac | 16140 |
| ctcggcgcg | ccgcggaccc | gcgcgcgcgc | gcgctgggcc | gcatggcggc | cgacctcgac | 16200 |
| cgccccggcg | acctgcgcga | cgccccgctc | gtcgagcacc | acgtctacct | gctcggcgag | 16260 |
| ggccgggtca | tctggtacca | ccgcgcgcac | cacatcgtct | gcgacggcgg | cagcctcggc | 16320 |
| attgtcgect | cccggtggc | cggcgtctat | tccgcgctcg | cgcccggtgg | tgacgtccgg | 16380 |
| ccgggtgcgc | tgccgcgcgt | gtcgggtgtg | ctgtcggccg | ccgacgccta | cgagcgctcc | 16440 |
| ggcgaccgcg | accgggaccg | cgagcaactg | cgtccgcgc | tggcgggcct | gccgcgcgag | 16500 |
| ctgctcgcgg | gcgcgggccc | gccgcggccc | ctgcccgac | cgccgggtgcg | ccacgagcac | 16560 |
| gacctctccg | cggcggaggc | gggcgggctg | cgcgcggggg | cgccggcggt | gcggaccagc | 16620 |
| gtggcgagc | ccggcatcgc | ggccgcggcc | ctctaccagc | accggctcac | cggcgcccgg | 16680 |
| gacgtgctgg | tggcggtgcc | cgtcgccggc | cgcaccaccc | gcccgagtt | cgacgtgccc | 16740 |
| ggcatgacgt | cgaacgtggt | gccggtgcgc | ctcgcgggtca | cgcccgccac | gaccgtcggc | 16800 |
| gagctgctgc | gcgacgtcgc | ccgtggtgtc | cgcgacggcc | tgcggcacca | gcggtaccgc | 16860 |
| tacccgaaca | tctgtggacga | cctcggcctg | gccgaccgtg | ccgcgctgcg | cccggtgacc | 16920 |
| gtcaacgccc | tggcgctggg | acggccgctg | cgttcgggt | cgccgggtggg | tgtgcgctcc | 16980 |

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|-------------|-------------|-------------|-------------|------------|-------------|-------|
| ggcctgtcgg | cgggccccgt | ggacgacgtc | accatcggcc | tctacgaaaa | ggtcagcggc | 17040 |
| ggcggcatgc | agacgatcgc | cgagctgaac | cccgggcgca | cggaccgccc | ggacgcggcg | 17100 |
| gaggtctccc | gctggttccg | tacgctgctg | cgcgggctgg | cgcagagcga | cgccggcgac | 17160 |
| ccggtggccc | gcatcgacat | cgtcgacgag | cccgagcgcc | gccggctgct | ggacgagtgg | 17220 |
| aacgccaccg | cggcgcgcgtc | gagcgacacc | gtcctcgcgc | gtttcgagga | gcaggcggcg | 17280 |
| cgtacgcccg | aggcgccccg | cgtcgtctgc | ggcgacgtga | cggtcaccta | cgccgagctg | 17340 |
| gaggccggcg | ccaaccggct | cgccccgcgtc | cttcgcgcgc | gcggcgccgg | accggagtgc | 17400 |
| gtcgtggccc | tctgcctgcc | ccgcggcccc | gaggtcgtga | cgggcatact | cgccgcctgg | 17460 |
| aaggcggggc | ccgcctacct | gccggtcgac | accgaactgc | cggccgagcg | cgtcgcctat | 17520 |
| ctgctcggcg | acagcgccgc | cgccgtccgc | ctcggcaccc | ccgagacgct | cgccgccttc | 17580 |
| ccggacggcc | ccgcgcgcga | cgtcgacgtc | cacgcaccgg | agatcgcccc | ggaatcgccc | 17640 |
| tgcgccctgc | ggctcgagcc | cttgccggat | cagttggcgt | atgtgattta | tacgtcgggt | 17700 |
| tgcacggggt | tgagcaaggg | tgtcgggtgt | tgcacgtgtg | ggttggcgaa | ttatgtgggt | 17760 |
| tgggcgtcgg | ttttgtatgg | gggtttgtcg | gcgccgttgc | attcttcggt | ggcttttgat | 17820 |
| ttgacgggtg | cgagtgtttt | tgtgccgttg | gtgtgtgggtg | gttcgggtgg | ggtgtcggcg | 17880 |
| gccggtgggtg | gtcgggggttt | ggcgtcgttg | ttggcggtcg | gtgatggttt | ttcgttggtg | 17940 |
| aagggtgggtg | cgggtcattt | gcgtttgctg | gcggagttgg | tgccggcggg | tgagatggcg | 18000 |
| gcgggtgggtt | cgttggtggc | cgggtggtgag | gttttgcccg | gtggtgatgt | gcgtgagtgg | 18060 |
| ttgtcgcggg | tgccgggttc | ggtggtgggtg | aatgagtacg | ggccgacgga | gaccgtgggtg | 18120 |
| ggttggttcgg | ttttctcggg | ggccgcgggt | gatgtgggtg | gtgatgtggt | gccggttggc | 18180 |
| cggccgggtg | cgaatacgcg | tttggttggt | ttggatgagg | gtttgcggcc | ggttcgggct | 18240 |
| gggggtggcg | gtgagttgta | tgtggctggt | tgcaggtgg | cgcgggggta | tgtgggtcgt | 18300 |
| tctggtttga | cggcttcgcg | ttttgtggcg | tgtccgttcg | gtgtgggtga | gcggatgtat | 18360 |
| cgcacgggtg | atgtgggtgcg | gttgcccggt | ggtgatctgg | tgtttggtgg | ccgggtcgat | 18420 |
| gagcaggtga | agattcgtgg | ttatcgggtg | gagccggatg | aggtgcgggt | ggtggtggcg | 18480 |
| gggcatccgc | gggtagcggg | tgcggcggtg | gtggctcggc | cggatgcggg | gggtgagcgg | 18540 |
| cagttgggtg | cctatgtggg | cgctgccggg | gagccggccg | ggttggcgga | gtcgggtacgc | 18600 |
| gcccacgtcg | ccgagcgct | gccgaatac | atggtcccg | ccgcgcgtcg | gaccctcgac | 18660 |
| gagatcccg | tgaccgtgaa | cggcaagggtc | gaccgcgcgc | ccctgcccga | gcccggcccc | 18720 |
| gtcgccaccg | gcaacgcgga | ccgcgagccc | acgaccgagc | gcgaatcgct | gctctgcggc | 18780 |
| gccttcgcgc | acgtgctcgg | catcgagcgg | gtggcgctcg | acgacgactt | cttcagcctc | 18840 |
| ggcggccatt | ccctgctcgc | caccagcctg | gtgagccggg | tacgcctcgt | gctcgggtgag | 18900 |

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|---|---|---|------------|------------|------------|-------|
| gaactgccca | tcgaggagct | cttcgccacg | cccacccccg | ccgagctggc | ggcctggctg | 18960 |
| caacgcaacg | cggaccggcc | gcaaccggcc | cggccggcgc | tgcgcccgat | gcacgaaagg | 19020 |
| gaaacgaccg | c atg acc ccg atg tcg tac gcc cag cgc cgt ctc tgg ttc | Met Thr Pro Met Ser Tyr Ala Gln Arg Arg Leu Trp Phe | 1 | 5 | 10 | 19070 |
| cag ctg cgg gtc gag ggc ccc gac gcc acg tac aac agt ccc gcc gtc | Gln Leu Arg Val Glu Gly Pro Asp Ala Thr Tyr Asn Ser Pro Ala Val | 15 | 20 | 25 | | 19118 |
| ctg cgc ctc acc ggc gag ctc gac acc gcc gcc ctg gag cac gcg ctg | Leu Arg Leu Thr Gly Glu Leu Asp Thr Ala Ala Leu Glu His Ala Leu | 30 | 35 | 40 | 45 | 19166 |
| cgc gac gtc ctc gaa cgg cac gag gtc ctg cgc acg gtc tat ccc gac | Arg Asp Val Leu Glu Arg His Glu Val Leu Arg Thr Val Tyr Pro Asp | 50 | 55 | 60 | | 19214 |
| gtc ggc ggc gag ccg cgg cag cgc gtg gtt cgc ccg gac gac atg gtg | Val Gly Gly Glu Pro Arg Gln Arg Val Val Arg Pro Asp Asp Met Val | 65 | 70 | 75 | | 19262 |
| tgg gag ctg ccc acg acc cgg gtg tcc ggt gcc ggc gcg ggc gac gac | Trp Glu Leu Pro Thr Thr Arg Val Ser Gly Ala Gly Ala Gly Asp Asp | 80 | 85 | 90 | | 19310 |
| cgg ctc gtc acg ctc gac gag ctg ccc tgg gac cgc ccg gtg ctc gac | Arg Leu Val Thr Leu Asp Glu Leu Pro Trp Asp Arg Pro Val Leu Asp | 95 | 100 | 105 | | 19358 |
| ctg ccg tcg ccc gca ccg gcc ggc cgg gaa ccg gac ggc gag atc acc | Leu Pro Ser Pro Ala Pro Ala Gly Arg Glu Pro Asp Gly Glu Ile Thr | 110 | 115 | 120 | 125 | 19406 |
| gtc gac gag ctg ccc ggc gcg atc gcc cgg gtg gcg gcc cac ccc ttc | Val Asp Glu Leu Pro Gly Ala Ile Ala Arg Val Ala Ala His Pro Phe | 130 | 135 | 140 | | 19454 |
| gac ctc tcc atc gag atc ccg gtg cgg gcg cgg ctg ttc gcc ctg ggc | Asp Leu Ser Ile Glu Ile Pro Val Arg Ala Arg Leu Phe Ala Leu Gly | 145 | 150 | 155 | | 19502 |
| ccg cgg cac cac gtc ctc gtc gtc gtg ctc cac cac atc gcc acc gac | Pro Arg His His Val Leu Val Val Val Leu His His Ile Ala Thr Asp | 160 | 165 | 170 | | 19550 |
| ggc agc tcc ggc ggg ccg ttc gcc cgc gac ctc gcc gcc gcc tac cgc | Gly Ser Ser Gly Gly Pro Phe Ala Arg Asp Leu Ala Ala Ala Tyr Arg | 175 | 180 | 185 | | 19598 |
| gcc cgc cgc acc gga acg gcg ccc cag tgg gca ccc ctt ccg gtg cag | Ala Arg Arg Thr Gly Thr Ala Pro Gln Trp Ala Pro Leu Pro Val Gln | 190 | 195 | 200 | 205 | 19646 |
| tac gcc gac tac gcg gcc tgg cag cag gaa ctg ctc ggc gcc gag gac | Tyr Ala Asp Tyr Ala Ala Trp Gln Gln Glu Leu Leu Gly Ala Glu Asp | 210 | 215 | 220 | | 19694 |
| gac ccc gac agc gtc atc tcg cgg cag ctc gcc cac tgg cag gag cgg | Asp Pro Asp Ser Val Ile Ser Arg Gln Leu Ala His Trp Gln Glu Arg | 225 | 230 | 235 | | 19742 |

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|---|-------|
| ctg gcc ggc atg ccg gtc gag ctg gat ctg ccg gcc gac cgt ccg cgg | 19790 |
| Leu Ala Gly Met Pro Val Glu Leu Asp Leu Pro Ala Asp Arg Pro Arg | |
| 240 245 250 | |
| ccc gcc gaa ccc ggg cac ggc ggg cac acc aag gcg ctg agc ctg ccc | 19838 |
| Pro Ala Glu Pro Gly His Gly Gly His Thr Lys Ala Leu Ser Leu Pro | |
| 255 260 265 | |
| ccg gcc gtg cac cga gga ctg gcc acg ctg gcc cgg cgg cgc cgc gcc | 19886 |
| Pro Ala Val His Arg Gly Leu Ala Thr Leu Ala Arg Arg Arg Arg Ala | |
| 270 275 280 285 | |
| acg ctt caa atg gtc gtg cag acc ggc gtc gcg atc ctg ctg tcc aag | 19934 |
| Thr Leu Gln Met Val Val Gln Thr Gly Val Ala Ile Leu Leu Ser Lys | |
| 290 295 300 | |
| ctc ggc gcc ggc cgc gac gtc ccg ctc ggc atc ccg gtc gcc ggg cgc | 19982 |
| Leu Gly Ala Gly Arg Asp Val Pro Leu Gly Ile Pro Val Ala Gly Arg | |
| 305 310 315 | |
| acc gac gcc gcg ctc gac gac ctg atc ggt ttc ttc gtc aac acc ttg | 20030 |
| Thr Asp Ala Ala Leu Asp Asp Leu Ile Gly Phe Phe Val Asn Thr Leu | |
| 320 325 330 | |
| gtc gta cgc gcc gac ctg tcc ggc gac ccc acg gtg gcc gac gcg ctg | 20078 |
| Val Val Arg Ala Asp Leu Ser Gly Asp Pro Thr Val Ala Asp Ala Leu | |
| 335 340 345 | |
| ggc cgg gtg cgc gga ggc gcg gtg gcc gcc ctg gcc gac cag gac gtg | 20126 |
| Gly Arg Val Arg Gly Gly Ala Val Ala Ala Leu Ala Asp Gln Asp Val | |
| 350 355 360 365 | |
| ccc ttc gac aaa ctc gtc gag ccg ctg gcg ccg gcc cgc gtg ctc ggg | 20174 |
| Pro Phe Asp Lys Leu Val Glu Arg Leu Ala Pro Ala Arg Val Leu Gly | |
| 370 375 380 | |
| cgg cac ccg ctg ttc cag gtc atg gtc gcg ccg ctc gac gac ggg acg | 20222 |
| Arg His Pro Leu Phe Gln Val Met Val Ala Pro Leu Asp Asp Gly Thr | |
| 385 390 395 | |
| ccg atc gac ctg gac ggg gtg cga ggc gag ccg ctc acc atc ggc cgc | 20270 |
| Pro Ile Asp Leu Asp Gly Val Arg Gly Glu Pro Leu Thr Ile Gly Arg | |
| 400 405 410 | |
| tcc ggt gcc aag ttc gac gtc gag gtg atg acc gga gag gta cgc gcg | 20318 |
| Ser Gly Ala Lys Phe Asp Val Glu Val Met Thr Gly Glu Val Arg Ala | |
| 415 420 425 | |
| gcg gac ggc gcg ccg gcc ggc atc cgc gga atc ctg acg ctc tcg gcc | 20366 |
| Ala Asp Gly Ala Pro Ala Gly Ile Arg Gly Ile Leu Thr Leu Ser Ala | |
| 430 435 440 445 | |
| gac ctg ttc gac gag gcg acg gcc ggc cgg atg gcc gcc ggg ctg gtg | 20414 |
| Asp Leu Phe Asp Glu Ala Thr Ala Gly Arg Met Ala Ala Gly Leu Val | |
| 450 455 460 | |
| cgg gtg ctg acc gcg atg gcc gag gcc ccg gag cgg cgg ctc tcc ggc | 20462 |
| Arg Val Leu Thr Ala Met Ala Glu Ala Pro Glu Arg Arg Leu Ser Gly | |
| 465 470 475 | |
| atc gag gtg ctg tcg ccg ggg gag ccg tcg ccg ctg ctg gtg gag tgg | 20510 |
| Ile Glu Val Leu Ser Pro Gly Glu Arg Ser Arg Leu Leu Val Glu Trp | |
| 480 485 490 | |

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|---|-------|
| aac gac acg gct cgt ccg gtg gtg gag tgc tgc gtg ccg gcg ttg ttc Asn Asp Thr Ala Arg Pro Val Val Glu Ser Ser Val Pro Ala Leu Phe 495 500 505 | 20558 |
| gcg aag cgg gtg gcg gcc acg ccg gac gcg acg gcg gtg gtg ggc gag Ala Lys Arg Val Ala Ala Thr Pro Asp Ala Thr Ala Val Val Gly Glu 510 515 520 525 | 20606 |
| ggt gtg tgc tgg tcc tat cgc gaa ctc gat cgt cgc tgc gat gtg ctg Gly Val Ser Trp Ser Tyr Arg Glu Leu Asp Arg Arg Ser Asp Val Leu 530 535 540 | 20654 |
| gcg ccg cgt ctg gtg gcg gcg ggt gtg ggt gtg gag tgc ccg gtg gtg Ala Arg Arg Leu Val Ala Ala Gly Val Gly Val Glu Ser Pro Val Val 545 550 555 | 20702 |
| gtg gcg ttg gag ccg tgc ccg gag gtg ctg tcc gcg ttt ttg gcg gtg Val Ala Leu Glu Arg Ser Pro Glu Val Leu Ser Ala Phe Leu Ala Val 560 565 570 | 20750 |
| gcg aag gcc ggt ggt gtg ttt gtt ccg gtg gat ttg tgc tgg ccg cag Ala Lys Ala Gly Gly Val Phe Val Pro Val Asp Leu Ser Trp Pro Gln 575 580 585 | 20798 |
| gcg cgt gtc gat gcg gtg gtt gct gac tgt gcc gcg ccg gtg gcg gtg Ala Arg Val Asp Ala Val Val Ala Asp Cys Ala Ala Arg Val Ala Val 590 595 600 605 | 20846 |
| gct gac ccg ccg atg agc ggg ctg acg gtc gtg tcc gcc ggc ctg ggc Ala Asp Arg Pro Met Ser Gly Leu Thr Val Ser Ala Gly Leu Gly 610 615 620 | 20894 |
| ggg gat tgc gcc gtc gtg tcc gcc gac ctg acc gcg gat ccg gcc gtt Gly Asp Ser Ala Val Val Ser Ala Asp Leu Thr Ala Asp Arg Ala Val 625 630 635 | 20942 |
| gtg ttg ccg tct cgc ccg gtg ccg ggt gcg gcg gtc tac ccg atg tac Val Leu Pro Ser Arg Pro Val Pro Gly Ala Ala Val Tyr Arg Met Tyr 640 645 650 | 20990 |
| acc tcc ggc tgc acg ggc cgc ccc aag ggt gtg gtg acc acc cac cag Thr Ser Gly Ser Thr Gly Arg Pro Lys Gly Val Val Thr Thr His Gln 655 660 665 | 21038 |
| aac ctg gtg gat ctg gcg acc gac acg tgt tgg ggt ccg acc ccg ccg Asn Leu Val Asp Leu Ala Thr Asp Thr Cys Trp Gly Pro Thr Pro Arg 670 675 680 685 | 21086 |
| gtg ctg ttc cac gcc ccg cac gcc ttc gac gcg tgc tgc tac gaa atc Val Leu Phe His Ala Pro His Ala Phe Asp Ala Ser Ser Tyr Glu Ile 690 695 700 | 21134 |
| tgg gtg cct ctg ttg aat ggc ggc acg gtc gtg gtc gcc ccg cag cgc Trp Val Pro Leu Asn Gly Gly Thr Val Val Val Ala Pro Gln Arg 705 710 715 | 21182 |
| agc atc gac gcc acc gtc ctg aag gat ctg atc cgc gcg cat gat ttg Ser Ile Asp Ala Thr Val Leu Lys Asp Leu Ile Arg Ala His Asp Leu 720 725 730 | 21230 |
| acg cac gtg cac gtc acc gcg ggc ctg ctg ccg gtg ctg gac ccg tgc Thr His Val His Val Thr Ala Gly Leu Leu Arg Val Leu Asp Pro Ser 735 740 745 | 21278 |

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|---|-------|
| tgc ttc gcg ggc ctg acc gag gtg ctc acg ggt ggc gat gcg gtg tcg Cys Phe Ala Gly Leu Thr Glu Val Leu Thr Gly Gly Asp Ala Val Ser 750 755 760 765 | 21326 |
| gcg gag gcg gtg cgc cgg gtc aaa gac gcg aac ccg ggt ctg cgg gtg Ala Glu Ala Val Arg Arg Val Lys Asp Ala Asn Pro Gly Leu Arg Val 770 775 780 | 21374 |
| cgg cag ctg tac ggc ccg acc gag gtg acg ctg tgc gcg acg cag cat Arg Gln Leu Tyr Gly Pro Thr Glu Val Thr Leu Cys Ala Thr Gln His 785 790 795 | 21422 |
| ctg ctg gat gac ggg gtg ccg atc ggg cgg ccg ttg gac aac acc cgc Leu Leu Asp Asp Gly Val Pro Ile Gly Arg Pro Leu Asp Asn Thr Arg 800 805 810 | 21470 |
| gtg tat gtc ctg gac gac ttg ctg cag ccg gtg ccg gtc ggt gtg acc Val Tyr Val Leu Asp Asp Leu Leu Gln Pro Val Pro Val Gly Val Thr 815 820 825 | 21518 |
| ggc gag ctg tat gtg gcc ggt gcc ggc gtg gcg cgt ggc tat gcg ggc Gly Glu Leu Tyr Val Ala Gly Ala Gly Val Ala Arg Gly Tyr Ala Gly 830 835 840 845 | 21566 |
| atg ccc ggg ttg acg gcc gag cga ttt gtc gcc gac ccg ttc aac acc Met Pro Gly Leu Thr Ala Glu Arg Phe Val Ala Asp Pro Phe Asn Thr 850 855 860 | 21614 |
| ggc ggt cgc ctc tac cgc acg ggt gat ctg gtg cgg tgg acc gat gac Gly Gly Arg Leu Tyr Arg Thr Gly Asp Leu Val Arg Trp Thr Asp Asp 865 870 875 | 21662 |
| ggt gtg ctg cat ttc gcc ggc cga gcc gat gat cag gtg aag atc cgc Gly Val Leu His Phe Ala Gly Arg Ala Asp Asp Gln Val Lys Ile Arg 880 885 890 | 21710 |
| ggc tat cgg gtg gag ccg ggc gag gtt gaa gcg gtt ctg gct caa cat Gly Tyr Arg Val Glu Pro Gly Glu Val Glu Ala Val Leu Ala Gln His 895 900 905 | 21758 |
| ccc gat gtc agc cag gtc gcg gtg gtc gtc ccg gag gac acc cca ggc Pro Asp Val Ser Gln Val Ala Val Val Val Arg Glu Asp Thr Pro Gly 910 915 920 925 | 21806 |
| gac aag cgt ctt gtc gcg tat gtc gtc ggc ggt gac atc gag gcg tat Asp Lys Arg Leu Val Ala Tyr Val Val Gly Gly Asp Ile Glu Ala Tyr 930 935 940 | 21854 |
| ggc cag gag cgc ctt ccc ggt tac atg gtc ccg tcg gca ttc gta cat Gly Gln Glu Arg Leu Pro Gly Tyr Met Val Pro Ser Ala Phe Val His 945 950 955 | 21902 |
| ctg gat gcg ttg ccg ctg acc agc aac cag aag gtg gat cgg gcc gca Leu Asp Ala Leu Pro Leu Thr Ser Asn Gln Lys Val Asp Arg Ala Ala 960 965 970 | 21950 |
| ctg ccc gcg ccg tcc atg gag tcc ggc gcc ggt cga gct ccc gcg gat Leu Pro Ala Pro Ser Met Glu Ser Gly Ala Gly Arg Ala Pro Ala Asp 975 980 985 | 21998 |
| gcc cgc gag gag ttg gtg tgt gcc gcg ttc gcc gag gtg ctc ggc ctg Ala Arg Glu Glu Leu Val Cys Ala Ala Phe Ala Glu Val Leu Gly Leu 990 995 1000 1005 | 22046 |

APPENDIX A

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-------|
| gat | cgg | gtc | ggt | gtc | gac | gac | gac | ttc | ttc | gct | ctc | ggc | ggt | cac | 22091 |
| Asp | Arg | Val | Gly | Val | Asp | Asp | Asp | Phe | Phe | Ala | Leu | Gly | Gly | His | |
| | | | | 1010 | | | | | 1015 | | | | | 1020 | |
| tcg | ctg | ctt | gcc | gtc | tcc | ctt | gtg | gag | gat | ttg | cgg | cag | cgt | ggc | 22136 |
| Ser | Leu | Leu | Ala | Val | Ser | Leu | Val | Glu | Asp | Leu | Arg | Gln | Arg | Gly | |
| | | | | 1025 | | | | | 1030 | | | | | 1035 | |
| ctg | cac | gtc | tcc | gtt | cgc | gcg | ctc | ttc | gcc | acg | ccg | acc | ccc | gcg | 22181 |
| Leu | His | Val | Ser | Val | Arg | Ala | Leu | Phe | Ala | Thr | Pro | Thr | Pro | Ala | |
| | | | | 1040 | | | | | 1045 | | | | | 1050 | |
| gcg | ctg | gcc | gtc | tcg | acc | gtg | ggc | gcc | ccg | atc | gag | gtg | ccg | ccc | 22226 |
| Ala | Leu | Ala | Val | Ser | Thr | Val | Ala | Ala | Pro | Ile | Glu | Val | Pro | Pro | |
| | | | | 1055 | | | | | 1060 | | | | | 1065 | |
| aac | ctc | atc | ccc | cag | ggc | ggc | gcc | cgg | gaa | ctg | acc | ccc | gac | atg | 22271 |
| Asn | Leu | Ile | Pro | Gln | Gly | Gly | Ala | Arg | Glu | Leu | Thr | Pro | Asp | Met | |
| | | | | 1070 | | | | | 1075 | | | | | 1080 | |
| ctg | ccc | ctg | gtc | gac | ctg | acc | ggc | gag | gag | ctg | gcc | acc | atc | gtg | 22316 |
| Leu | Pro | Leu | Val | Asp | Leu | Thr | Gly | Glu | Glu | Leu | Ala | Thr | Ile | Val | |
| | | | | 1085 | | | | | 1090 | | | | | 1095 | |
| gcc | gcg | gtg | ccc | ggc | ggc | gct | gcc | aac | atc | gcc | gac | atc | tac | ccc | 22361 |
| Ala | Ala | Val | Pro | Gly | Gly | Ala | Ala | Asn | Ile | Ala | Asp | Ile | Tyr | Pro | |
| | | | | 1100 | | | | | 1105 | | | | | 1110 | |
| cta | gcc | ccg | ctg | caa | gag | ggc | atc | ttc | ttc | cac | cac | ctc | atg | acc | 22406 |
| Leu | Ala | Pro | Leu | Gln | Glu | Gly | Ile | Phe | Phe | His | His | Leu | Met | Thr | |
| | | | | 1115 | | | | | 1120 | | | | | 1125 | |
| gag | ggc | gac | acc | gcc | gac | gtc | tac | gcg | ctg | ccg | tac | ctg | ctg | gcg | 22451 |
| Glu | Gly | Asp | Thr | Ala | Asp | Val | Tyr | Ala | Leu | Pro | Tyr | Leu | Leu | Arg | |
| | | | | 1130 | | | | | 1135 | | | | | 1140 | |
| gtt | ggc | acg | cgt | gag | cag | ctc | gac | gcc | ttc | ctc | ggg | gct | ttg | cag | 22496 |
| Val | Gly | Thr | Arg | Glu | Gln | Leu | Asp | Ala | Phe | Leu | Gly | Ala | Leu | Gln | |
| | | | | 1145 | | | | | 1150 | | | | | 1155 | |
| cag | gtg | gtg | gac | cgc | cac | gac | gtc | tac | cgc | acg | gcc | atc | gcc | tgg | 22541 |
| Gln | Val | Val | Asp | Arg | His | Asp | Val | Tyr | Arg | Thr | Ala | Ile | Ala | Trp | |
| | | | | 1160 | | | | | 1165 | | | | | 1170 | |
| cag | aac | ctg | cgc | gag | ccc | gtc | cag | gtc | gtg | cac | cgc | cac | gcc | acc | 22586 |
| Gln | Asn | Leu | Arg | Glu | Pro | Val | Gln | Val | Val | His | Arg | His | Ala | Thr | |
| | | | | 1175 | | | | | 1180 | | | | | 1185 | |
| ctg | ccc | gtc | acc | gaa | gtc | acc | ccc | gac | caa | ctg | cac | gcc | gcc | gcc | 22631 |
| Leu | Pro | Val | Thr | Glu | Val | Thr | Pro | Asp | Gln | Leu | His | Ala | Ala | Ala | |
| | | | | 1190 | | | | | 1195 | | | | | 1200 | |
| acc | ggc | ggc | cgg | ctc | ccg | ctc | gac | cac | gca | ccc | ctg | ctc | agc | gtc | 22676 |
| Thr | Gly | Gly | Arg | Leu | Pro | Leu | Asp | His | Ala | Pro | Leu | Leu | Ser | Val | |
| | | | | 1205 | | | | | 1210 | | | | | 1215 | |
| cac | atc | gca | ccc | gaa | ccc | gac | ggc | ggc | tgg | ctc | gcc | cta | ctg | cgc | 22721 |
| His | Ile | Ala | Pro | Glu | Pro | Asp | Gly | Gly | Trp | Leu | Ala | Leu | Leu | Arg | |
| | | | | 1220 | | | | | 1225 | | | | | 1230 | |
| atg | cac | cac | ctc | gtg | cag | gac | cac | acc | gcc | ctc | gac | atc | gtc | ctc | 22766 |
| Met | His | His | Leu | Val | Gln | Asp | His | Thr | Ala | Leu | Asp | Ile | Val | Leu | |
| | | | | 1235 | | | | | 1240 | | | | | 1245 | |

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| | | | |
|---------------------|---------------------|---------------------|-------|
| gac gag atc cgc acc | atc ctc gcc ggc gca | acc gac cac ctc ccc | 22811 |
| Asp Glu Ile Arg Thr | Ile Leu Ala Gly Ala | Thr Asp His Leu Pro | |
| 1250 | 1255 | 1260 | |
| ccg ccc gta ccg ttc | cgc aat ttc gtg gcg | cgc tcg cgg cgt ggt | 22856 |
| Pro Pro Val Pro Phe | Arg Asn Phe Val Ala | Arg Ser Arg Arg Gly | |
| 1265 | 1270 | 1275 | |
| gcc gcc gag gcc gcg | cac cgc gac tac ttc | acc ggc ctg ctc ggc | 22901 |
| Ala Ala Glu Ala Ala | His Arg Asp Tyr Phe | Thr Gly Leu Leu Gly | |
| 1280 | 1285 | 1290 | |
| gac gtc acc gag acc | acc gcc ccg tac ggc | ctc acc gac gtg cac | 22946 |
| Asp Val Thr Glu Thr | Thr Ala Pro Tyr Gly | Leu Thr Asp Val His | |
| 1295 | 1300 | 1305 | |
| ggt gag cac tcc ggc | gtg cgc cgg ggc cgg | ctc gcc gtg tcc gcc | 22991 |
| Gly Glu His Ser Gly | Val Arg Arg Gly Arg | Leu Ala Val Ser Ala | |
| 1310 | 1315 | 1320 | |
| ggg ctc gcc ggc cgg | gtg cgg gag acc gct | cgc gac cgg ggc gtc | 23036 |
| Gly Leu Ala Gly Arg | Val Arg Glu Thr Ala | Arg Asp Arg Gly Val | |
| 1325 | 1330 | 1335 | |
| agc ccc gcc acc ctc | ttc cac ctg gcc tgg | gcg cgc gtg ctc gcc | 23081 |
| Ser Pro Ala Thr Leu | Phe His Leu Ala Trp | Ala Arg Val Leu Ala | |
| 1340 | 1345 | 1350 | |
| gcc gtc tcg ggc cgc | gac gac gtc gtc ttc | ggc acc gtg ctg ctg | 23126 |
| Ala Val Ser Gly Arg | Asp Asp Val Val Phe | Gly Thr Val Leu Leu | |
| 1355 | 1360 | 1365 | |
| ggc cgg atg gat gcc | ggc ccg ggc gcc gac | cgg gtg ccg ggc ctt | 23171 |
| Gly Arg Met Asp Ala | Gly Pro Gly Ala Asp | Arg Val Pro Gly Leu | |
| 1370 | 1375 | 1380 | |
| ttc atg aac acc ctg | ccg gtt cgc gta cgc | ctc ggc ggc cgc acc | 23216 |
| Phe Met Asn Thr Leu | Pro Val Arg Val Arg | Leu Gly Gly Arg Thr | |
| 1385 | 1390 | 1395 | |
| gtc gac gag gcg ctg | cac ggg atg cgc gcc | cag ctc gcc gac ctg | 23261 |
| Val Asp Glu Ala Leu | His Gly Met Arg Ala | Gln Leu Ala Asp Leu | |
| 1400 | 1405 | 1410 | |
| ctc acc cac gag cac | gcc ccg ctg gtg ctc | gcg cag cag tcg gcc | 23306 |
| Leu Thr His Glu His | Ala Pro Leu Val Leu | Ala Gln Gln Ser Ala | |
| 1415 | 1420 | 1425 | |
| ggc ctg ccc ggc ggc | agc ccc ctg ttc acc | tcg ctg ttc aac tac | 23351 |
| Gly Leu Pro Gly Gly | Ser Pro Leu Phe Thr | Ser Leu Phe Asn Tyr | |
| 1430 | 1435 | 1440 | |
| cgg cac aac gcg acc | gac atc gag cgc tcc | gga acg ggc atc gac | 23396 |
| Arg His Asn Ala Thr | Asp Ile Glu Arg Ser | Gly Thr Gly Ile Asp | |
| 1445 | 1450 | 1455 | |
| ggc gtc gag gcg ctg | ccc acc ggc gac ccg | tcg aac tat ccg ctc | 23441 |
| Gly Val Glu Ala Leu | Pro Thr Gly Asp Pro | Ser Asn Tyr Pro Leu | |
| 1460 | 1465 | 1470 | |
| gac gtc tcg gtc aac | cag agc ccg ctc ggc | ttc gag ctc gtc gtc | 23486 |
| Asp Val Ser Val Asn | Gln Ser Pro Leu Gly | Phe Glu Leu Val Val | |
| 1475 | 1480 | 1485 | |

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| | |
|--|-------|
| gag gcc acc gag ccg gcc gac ccg gac cag ctc tgc cgg ctc ctg Glu Ala Thr Glu Pro Ala Asp Pro Asp Gln Leu Cys Arg Leu Leu | 23531 |
| 1490 1495 1500 | |
| cac gcc tgc ctc gac gac ctg atc gcc gcc ctc gac gag cag ccc His Ala Cys Leu Asp Asp Leu Ile Ala Ala Leu Asp Glu Gln Pro | 23576 |
| 1505 1510 1515 | |
| ggc cgc gcg ctc ggc acc ctc gac gtc gtc gcc gga cgg gag cgc Gly Arg Ala Leu Gly Thr Leu Asp Val Val Ala Gly Arg Glu Arg | 23621 |
| 1520 1525 1530 | |
| gac ctc ctc ctg gac ggc tgg aac gcc acg gcg gtc ccg gcc cag Asp Leu Leu Leu Asp Gly Trp Asn Ala Thr Ala Val Pro Ala Gln | 23666 |
| 1535 1540 1545 | |
| ccg gcc ctg gtg ccg gag ctc ttc acg gcg cag gcg gcg cgg aca Pro Ala Leu Val Pro Glu Leu Phe Thr Ala Gln Ala Ala Arg Thr | 23711 |
| 1550 1555 1560 | |
| ccc acc tgg ccg gcg ctg gtg acg gcc ggc gcg gag atg tcc tac Pro Thr Trp Pro Ala Leu Val Thr Ala Gly Ala Glu Met Ser Tyr | 23756 |
| 1565 1570 1575 | |
| gcc gag ctc gag gag cgg tcc aac cgg ctg gcg cgc tgg ctg gcc Ala Glu Leu Glu Glu Arg Ser Asn Arg Leu Ala Arg Trp Leu Ala | 23801 |
| 1580 1585 1590 | |
| ggg cgc ggg gtg ggc gcc gac gac cgg gtg gcc ctg atg atg cgc Gly Arg Gly Val Gly Ala Asp Asp Arg Val Ala Leu Met Met Arg | 23846 |
| 1595 1600 1605 | |
| cgc ggc ccg gag ctg atg gtg gcg atc ctg gcc gtg ctc aag gcg Arg Gly Pro Glu Leu Met Val Ala Ile Leu Ala Val Leu Lys Ala | 23891 |
| 1610 1615 1620 | |
| ggc gcg gcg tat ctg ccc gtg gat ccg gac ctg ccc cgc gac cgg Gly Ala Ala Tyr Leu Pro Val Asp Pro Asp Leu Pro Arg Asp Arg | 23936 |
| 1625 1630 1635 | |
| gtg gac tac ctg ctc gcg gac gcg gcc ccg gcg ttc gtg ctg gcc Val Asp Tyr Leu Leu Ala Asp Ala Ala Pro Ala Phe Val Leu Ala | 23981 |
| 1640 1645 1650 | |
| gag cgg gcc acc gcg ccg tgg gtg ccg gtg gcc ggt ggg att ccg Glu Arg Ala Thr Ala Pro Trp Val Pro Val Ala Gly Gly Ile Pro | 24026 |
| 1655 1660 1665 | |
| gtg ctg gtc gtg gac gcg ccg gcc gtc gcc gcc gag gtg gcg gcc Val Leu Val Val Asp Ala Pro Ala Val Ala Ala Glu Val Ala Ala | 24071 |
| 1670 1675 1680 | |
| cac tcg ggc gag gcc gtc acc gac cgg gac cgg cgc gcc gcc ctg His Ser Gly Glu Ala Val Thr Asp Arg Asp Arg Arg Ala Ala Leu | 24116 |
| 1685 1690 1695 | |
| cgc ggc ggc cac ctc gcc tac gtc atc tac acc tcg gga tcc acc Arg Gly Gly His Leu Ala Tyr Val Ile Tyr Thr Ser Gly Ser Thr | 24161 |
| 1700 1705 1710 | |
| ggg cgg ccc aag ggc gtg ctg atc acg cac gac ggc ctc gcc aat Gly Arg Pro Lys Gly Val Leu Ile Thr His Asp Gly Leu Ala Asn | 24206 |
| 1715 1720 1725 | |

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| | | | |
|--|--|--|-------|
| ctc acg ctc gac cac Leu Thr Leu Asp His 1730 | ggc cgg ttc ggc ctc Gly Arg Phe Gly Leu 1735 | ggt ccg ggt gcc cgg Gly Pro Gly Ala Arg 1740 | 24251 |
| gtg gcg cag ttc gcc Val Ala Gln Phe Ala 1745 | tcg ccc ggc ttc gac Ser Pro Gly Phe Asp 1750 | atg ttc gtc gac gag Met Phe Val Asp Glu 1755 | 24296 |
| tgg tcg atg gcg ctg Trp Ser Met Ala Leu 1760 | ctg gcc ggc gcc gcg Leu Ala Gly Ala Ala 1765 | ctg acc ttc gtg ccg Leu Thr Phe Val Pro 1770 | 24341 |
| ccg gag cgg cga ctg Pro Glu Arg Arg Leu 1775 | ggc gcc gac ctg gcc Gly Ala Asp Leu Ala 1780 | gcg ttc ctc gcc gag Ala Phe Leu Ala Glu 1785 | 24386 |
| tac ggc gtg acg cac Tyr Gly Val Thr His 1790 | gcg acg ctg ccg ccc Ala Thr Leu Pro Pro 1795 | gcg gtc gtg ggc acg Ala Val Val Gly Thr 1800 | 24431 |
| atc ccg gac ggt gtg Ile Pro Asp Gly Val 1805 | ctg ccg ccg tcg ttc Leu Pro Pro Ser Phe 1810 | gtg ctc gac gtc gcc Val Leu Asp Val Gly 1815 | 24476 |
| ggc gac gtg ctg ccg Gly Asp Val Leu Pro 1820 | ggc gac ctc gcg cgc Gly Asp Leu Ala Arg 1825 | ccg tgg ctg cgc gac Arg Trp Leu Arg Asp 1830 | 24521 |
| ggc cgg gtg ctg ttc Gly Arg Val Leu Phe 1835 | aac tcg tac ggc ccg Asn Ser Tyr Gly Pro 1840 | acg gag acc acg gtc Thr Glu Thr Thr Val 1845 | 24566 |
| aac gcg gcg acg tgg Asn Ala Ala Thr Trp 1850 | ccg gcc gag gcc ggt Arg Ala Glu Ala Gly 1855 | gac tgg gga agc gtg Asp Trp Gly Ser Val 1860 | 24611 |
| gcg ccg atc ggc acg Ala Pro Ile Gly Thr 1865 | ccc gtg ccg aat ctg Pro Val Pro Asn Leu 1870 | ccg gcg tac gtg ctc Arg Ala Tyr Val Leu 1875 | 24656 |
| gac ggc tgg ctg cgc Asp Gly Trp Leu Arg 1880 | ccg gtg ccg gtg ggc Pro Val Pro Val Gly 1885 | gcc gac ggc gag ctg Ala Asp Gly Glu Leu 1890 | 24701 |
| tac gtc tcg ggc gcc Tyr Val Ser Gly Ala 1895 | gga ctc gcc cgc ggc Gly Leu Ala Arg Gly 1900 | tat ctg aac cgg gcc Tyr Leu Asn Arg Ala 1905 | 24746 |
| ggc ctg acc gcg gag Gly Leu Thr Ala Glu 1910 | cgg ttc gtg gcg tgc Arg Phe Val Ala Cys 1915 | ccg ttc gag ccg ggg Pro Phe Glu Pro Gly 1920 | 24791 |
| gag cgg atg tac cgc Glu Arg Met Tyr Arg 1925 | acc ggc gac gtg gtg Thr Gly Asp Val Val 1930 | cgg tgg acc gcc gag Arg Trp Thr Ala Glu 1935 | 24836 |
| ggg cgc ctg gtg ttc Gly Arg Leu Val Phe 1940 | gcc ggt cgc tcg gac Ala Gly Arg Ser Asp 1945 | gac cag gtc aag atc Asp Gln Val Lys Ile 1950 | 24881 |
| cgc gga ttc cgg atc Arg Gly Phe Arg Ile 1955 | gag ccc ggc gag gtg Glu Pro Gly Glu Val 1960 | gag gcc gtg ctg gcc Glu Ala Val Leu Ala 1965 | 24926 |

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| | | | |
|--|--|--|-------|
| gcc gga ccg ggt gtg Ala Gly Pro Gly Val 1970 | agc cag gcc gcg gtg Ser Gln Ala Ala Val 1975 | atc gtg cgt gag gac Ile Val Arg Glu Asp 1980 | 24971 |
| gtg ccg ggt gac aag Val Pro Gly Asp Lys 1985 | cgc ttg gtg gcg tac Arg Leu Val Ala Tyr 1990 | gtc gtg ggc ggt gac Val Val Gly Gly Asp 1995 | 25016 |
| gtc gaa gct ctc cgg Val Glu Ala Leu Arg 2000 | tcg tac gcg cag cag Ser Tyr Ala Gln Gln 2005 | cgg ttg ccg ggt tac Arg Leu Pro Gly Tyr 2010 | 25061 |
| atg gtg ccg tcg gct Met Val Pro Ser Ala 2015 | ttc gtg gag ctg gac Phe Val Glu Leu Asp 2020 | cgg ttg ccc ttg acg Arg Leu Pro Leu Thr 2025 | 25106 |
| gtg aac ggc aag ctc Val Asn Gly Lys Leu 2030 | gac cgc cgg gcc ctg Asp Arg Arg Ala Leu 2035 | ccg gtg ccc gac ctc Pro Val Pro Asp Leu 2040 | 25151 |
| gcc cgc ggc acg gga Ala Arg Gly Thr Gly 2045 | tcc ggc cgg ccc gcc Ser Gly Arg Pro Ala 2050 | ggc acg ccg cgc gag Gly Thr Pro Arg Glu 2055 | 25196 |
| cag ctg ttg tgc gcg Gln Leu Leu Cys Ala 2060 | ggc ttc gcg gcc gtc Gly Phe Ala Ala Val 2065 | ctg ggc gtg gac gac Leu Gly Val Asp Asp 2070 | 25241 |
| gtc ggc gcc gac gac Val Gly Ala Asp Asp 2075 | gac ttc ttc gcg ctc Asp Phe Phe Ala Leu 2080 | ggc ggt cat tcg ctg Gly Gly His Ser Leu 2085 | 25286 |
| ttg gtg gtt tct ctg Leu Val Val Ser Leu 2090 | gtg gag tgg ctg cgc Val Glu Trp Leu Arg 2095 | cgt cgt ggg gtc tcg Arg Arg Gly Val Ser 2100 | 25331 |
| gtg ccg gtg cgg gcg Val Pro Val Arg Ala 2105 | ttg ttc acc acg ccg Leu Phe Thr Thr Pro 2110 | acc ccg gcc ggg ctg Thr Pro Ala Gly Leu 2115 | 25376 |
| gcc gag gcg gtc ggt Ala Glu Ala Val Gly 2120 | gat ggt gcc gtg gtg Asp Gly Ala Val Val 2125 | gtg ccg ccg aac ctg Val Pro Pro Asn Leu 2130 | 25421 |
| att ccg gaa ggt gcg Ile Pro Glu Gly Ala 2135 | gcc gag ctg acc ccg Ala Glu Leu Thr Pro 2140 | gag atg gtg ccg ctg Glu Met Val Pro Leu 2145 | 25466 |
| gcc gat ctg acg tcc Ala Asp Leu Thr Ser 2150 | gag gag ctg gcg atc Glu Glu Leu Ala Ile 2155 | gtc gtc gca tcg gtg Val Val Ala Ser Val 2160 | 25511 |
| ccg ggc ggt gcg gcc Pro Gly Gly Ala Ala 2165 | aat gtg gcc gat gtg Asn Val Ala Asp Val 2170 | tat ccg ttg gcg ccg Tyr Pro Leu Ala Pro 2175 | 25556 |
| ttg cag gag ggc atc Leu Gln Glu Gly Ile 2180 | ttc ttc ccc gta gcc Phe Phe Pro Val Ala 2185 | aca ggc ccc cag tgc Thr Gly Pro Gln Cys 2190 | 25601 |
| tac gcc acg gtg ggg Tyr Ala Thr Val Gly 2195 | agt tca ctc ccg gac Ser Ser Leu Pro Asp 2200 | gat ggc ggt tct gcc Asp Gly Gly Ser Ala 2205 | 25646 |

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| | | | |
|---------------------|---------------------|---------------------|-------|
| cct tgc agc agg ttt | cgc cgt cga tgt gta | tcg acg agt gtg gtg | 25691 |
| Pro Cys Ser Arg Phe | Arg Arg Arg Cys Val | Ser Thr Ser Val Val | |
| 2210 | 2215 | 2220 | |
| tgg cag ggg ctg cgt | gag ccg gtg cag gtg | gtg tgg cgg cac gcg | 25736 |
| Trp Gln Gly Leu Arg | Glu Pro Val Gln Val | Val Trp Arg His Ala | |
| 2225 | 2230 | 2235 | |
| cgg ctg ccc gtc gag | gag gtc gtg ctg cac | gag ggg gcc gac ccg | 25781 |
| Arg Leu Pro Val Glu | Glu Val Val Leu His | Glu Gly Ala Asp Pro | |
| 2240 | 2245 | 2250 | |
| gtc gag cag atg atg | gcg ctc gcc ggc ggt | tgg atg gac ctc acc | 25826 |
| Val Glu Gln Met Met | Ala Leu Ala Gly Gly | Trp Met Asp Leu Thr | |
| 2255 | 2260 | 2265 | |
| cgg gcg ccg ctc atc | gac gtc cac atc gcc | gcc ggc ccc ggc ggc | 25871 |
| Arg Ala Pro Leu Ile | Asp Val His Ile Ala | Ala Gly Pro Gly Gly | |
| 2270 | 2275 | 2280 | |
| gac cgc tgg ctg gcc | gtg ctg cgc atc cac | cac ctc gtg cag gac | 25916 |
| Asp Arg Trp Leu Ala | Val Leu Arg Ile His | His Leu Val Gln Asp | |
| 2285 | 2290 | 2295 | |
| cac acc gcc ctg gag | acg ctg ctc gac gag | ctg cag tcc ttt ctg | 25961 |
| His Thr Ala Leu Glu | Thr Leu Leu Asp Glu | Leu Gln Ser Phe Leu | |
| 2300 | 2305 | 2310 | |
| gag ggc cgc ggt ggc | gag ctt gcc gag ccg | gtg ccg ttc cgc gag | 26006 |
| Glu Gly Arg Gly Gly | Glu Leu Ala Glu Pro | Val Pro Phe Arg Glu | |
| 2315 | 2320 | 2325 | |
| ttc gtg gcg cag gcg | cgg ctc ggt gtg ccg | cgc gag gag cac gag | 26051 |
| Phe Val Ala Gln Ala | Arg Leu Gly Val Pro | Arg Glu Glu His Glu | |
| 2330 | 2335 | 2340 | |
| cgg tat ttc gcg gag | ttg ctc gcc gac atc | acc gag acc acc gcg | 26096 |
| Arg Tyr Phe Ala Glu | Leu Leu Gly Asp Ile | Thr Glu Thr Thr Ala | |
| 2345 | 2350 | 2355 | |
| ccg tac gac ctg acc | gac gtg cac ggc gac | ggc acc gga tac gac | 26141 |
| Pro Tyr Asp Leu Thr | Asp Val His Gly Asp | Gly Thr Gly Tyr Asp | |
| 2360 | 2365 | 2370 | |
| cac ggc gcg ctg ccg | ctg gac gcc acc gtc | gcg gcc cgc gtc ccg | 26186 |
| His Gly Ala Leu Pro | Leu Asp Ala Thr Val | Ala Ala Arg Val Arg | |
| 2375 | 2380 | 2385 | |
| gag gcg gcc cga acc | ctc gcc gtc agc ccg | gcg acg ctc ttc cac | 26231 |
| Glu Ala Ala Arg Thr | Leu Gly Val Ser Pro | Ala Thr Leu Phe His | |
| 2390 | 2395 | 2400 | |
| ctc gcg tgg gcg ccg | gtg ctc gcc acg ctg | gcc ggg cgc gac gac | 26276 |
| Leu Ala Trp Ala Arg | Val Leu Gly Thr Leu | Ala Gly Arg Asp Asp | |
| 2405 | 2410 | 2415 | |
| gtc gtc ttc gcc acc | gtc ctg ttc gga ccg | atg aac tcg ggt gcc | 26321 |
| Val Val Phe Gly Thr | Val Leu Phe Gly Arg | Met Asn Ser Gly Ala | |
| 2420 | 2425 | 2430 | |
| ggc gcc gac ccg gtc | tcc gcc ctg ttc atc | aac acg ctg ccg gtg | 26366 |
| Gly Ala Asp Arg Val | Ser Gly Leu Phe Ile | Asn Thr Leu Pro Val | |
| 2435 | 2440 | 2445 | |

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|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-------|
| cgg | gtg | cgg | ctc | ggc | gcg | ccc | acc | ggc | gac | gcc | ctc | ggc | gac | ctc | 26411 |
| Arg | Val | Arg | Leu | Gly | Ala | Pro | Thr | Gly | Asp | Ala | Leu | Gly | Asp | Leu | |
| | | | | 2450 | | | | | 2455 | | | | | 2460 | |
| cgc | gac | cag | ctc | gcc | gag | ctg | ctc | gtg | cac | gag | cac | gcc | tcc | ctc | 26456 |
| Arg | Asp | Gln | Leu | Ala | Glu | Leu | Leu | Val | His | Glu | His | Ala | Ser | Leu | |
| | | | | 2465 | | | | | 2470 | | | | | 2475 | |
| gcc | tcc | gcg | cag | aag | gcg | agc | ggc | ctg | ccc | ggc | ggg | agc | ccc | ctg | 26501 |
| Ala | Ser | Ala | Gln | Lys | Ala | Ser | Gly | Leu | Pro | Gly | Gly | Ser | Pro | Leu | |
| | | | | 2480 | | | | | 2485 | | | | | 2490 | |
| ttc | acg | tcg | atc | ttc | aac | tac | cgg | cac | aac | cag | gtg | agc | gcc | gaa | 26546 |
| Phe | Thr | Ser | Ile | Phe | Asn | Tyr | Arg | His | Asn | Gln | Val | Ser | Ala | Glu | |
| | | | | 2495 | | | | | 2500 | | | | | 2505 | |
| cgg | gag | acc | gcc | gcg | ctg | ccc | ggc | atc | cgc | gtc | ctc | gcg | gcc | cgc | 26591 |
| Arg | Glu | Thr | Ala | Ala | Leu | Pro | Gly | Ile | Arg | Val | Leu | Ala | Ala | Arg | |
| | | | | 2510 | | | | | 2515 | | | | | 2520 | |
| gac | tcc | acg | aac | tat | ccg | ctc | acc | gtc | gcg | gtg | gac | gac | gac | ggg | 26636 |
| Asp | Ser | Thr | Asn | Tyr | Pro | Leu | Thr | Val | Ala | Val | Asp | Asp | Asp | Gly | |
| | | | | 2525 | | | | | 2530 | | | | | 2535 | |
| cac | ggc | ttc | acg | ctc | gtg | gtc | gag | gtc | gcg | tcc | aca | gtc | gac | gcc | 26681 |
| His | Gly | Phe | Thr | Leu | Val | Val | Glu | Val | Ala | Ser | Thr | Val | Asp | Ala | |
| | | | | 2540 | | | | | 2545 | | | | | 2550 | |
| gcg | ggc | gtc | tgc | gaa | ctg | ctg | cac | acc | gcc | gtg | gac | aac | ctc | atc | 26726 |
| Ala | Gly | Val | Cys | Glu | Leu | Leu | His | Thr | Ala | Val | Asp | Asn | Leu | Ile | |
| | | | | 2555 | | | | | 2560 | | | | | 2565 | |
| gcg | gcc | ctc | acc | gac | cgg | ccg | ggc | ggg | ccg | ctg | gcc | gag | gtc | gac | 26771 |
| Ala | Ala | Leu | Thr | Asp | Arg | Pro | Gly | Gly | Pro | Leu | Ala | Glu | Val | Asp | |
| | | | | 2570 | | | | | 2575 | | | | | 2580 | |
| atc | ctc | gaa | cgc | ggc | ctg | cgg | gac | cgc | ctg | ctg | acc | gcc | tgg | aac | 26816 |
| Ile | Leu | Glu | Arg | Gly | Leu | Arg | Asp | Arg | Leu | Leu | Thr | Ala | Trp | Asn | |
| | | | | 2585 | | | | | 2590 | | | | | 2595 | |
| gag | gcc | cgg | gag | ccc | gca | ccg | ccg | gtg | acc | ctg | ccc | gac | ctg | ttc | 26861 |
| Glu | Ala | Arg | Glu | Pro | Ala | Pro | Pro | Val | Thr | Leu | Pro | Asp | Leu | Phe | |
| | | | | 2600 | | | | | 2605 | | | | | 2610 | |
| gac | cgg | cag | gcc | cgc | cgc | acg | ccc | gag | gcg | gtc | gcg | ctc | acc | gcg | 26906 |
| Asp | Arg | Gln | Ala | Arg | Arg | Thr | Pro | Glu | Ala | Val | Ala | Leu | Thr | Ala | |
| | | | | 2615 | | | | | 2620 | | | | | 2625 | |
| gac | ggc | gtc | tcg | ctg | acc | tac | cgc | gag | ctg | tcg | gag | cgc | gcc | aac | 26951 |
| Asp | Gly | Val | Ser | Leu | Thr | Tyr | Arg | Glu | Leu | Ser | Glu | Arg | Ala | Asn | |
| | | | | 2630 | | | | | 2635 | | | | | 2640 | |
| cgg | atc | gcc | cgg | ctg | ctc | acc | tcc | cgg | ggg | atc | ggc | ccg | gag | tcg | 26996 |
| Arg | Ile | Ala | Arg | Leu | Leu | Thr | Ser | Arg | Gly | Ile | Gly | Pro | Glu | Ser | |
| | | | | 2645 | | | | | 2650 | | | | | 2655 | |
| ctc | gtc | ggc | gtc | gtc | ctg | ccc | cgc | tcg | gcc | gac | ctg | gtc | gtt | gcg | 27041 |
| Leu | Val | Gly | Val | Val | Leu | Pro | Arg | Ser | Ala | Asp | Leu | Val | Val | Ala | |
| | | | | 2660 | | | | | 2665 | | | | | 2670 | |
| ctg | ctc | ggc | gtt | ctc | cag | gcc | ggc | gcg | gcc | tac | gtg | ccg | gtc | gac | 27086 |
| Leu | Leu | Gly | Val | Leu | Gln | Ala | Gly | Ala | Ala | Tyr | Val | Pro | Val | Asp | |
| | | | | 2675 | | | | | 2680 | | | | | 2685 | |

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| | |
|--|-------|
| gcc gac tac ccg gcc gag cgg atc ggg tac atc ctc ggc gac gcg Ala Asp Tyr Pro Ala Glu Arg Ile Gly Tyr Ile Leu Gly Asp Ala | 27131 |
| 2690 2695 2700 | |
| ggc gcg gtt tgc gtg ctc aca gtg gac gcg acc gcg ggc gcc gtt Gly Ala Val Cys Val Leu Thr Val Asp Ala Thr Ala Gly Ala Val | 27176 |
| 2705 2710 2715 | |
| cct ccc ggc gta ccg aaa ctg gtg ctg gac cac ccg gaa acc gtg Pro Pro Gly Val Pro Lys Leu Val Leu Asp His Pro Glu Thr Val | 27221 |
| 2720 2725 2730 | |
| acc gcg ctg gcg gcg tgt gac acg gca ccg ctc ggc gag gcc gag Thr Ala Leu Ala Ala Cys Asp Thr Ala Pro Leu Gly Glu Ala Glu | 27266 |
| 2735 2740 2745 | |
| cgg gcc ggc gaa ctg ctg ccg gag cac ccc gcc tac gtc atc tac Arg Ala Gly Glu Leu Leu Pro Glu His Pro Ala Tyr Val Ile Tyr | 27311 |
| 2750 2755 2760 | |
| acc tcc ggc tcc acc ggc acg ccc aag gcg gtg ctc atc ccg cac Thr Ser Gly Ser Thr Gly Thr Pro Lys Gly Val Leu Ile Pro His | 27356 |
| 2765 2770 2775 | |
| cgc aac gtg gtc gag ctc ttc gcc gcc acc cgc ggc tcg ttc cac Arg Asn Val Val Glu Leu Phe Ala Ala Thr Arg Gly Ser Phe His | 27401 |
| 2780 2785 2790 | |
| ttc ggc gag ggt gac gtg tgg tcg tgg ttc cac tcg gtc gcc ttc Phe Gly Glu Gly Asp Val Trp Ser Trp Phe His Ser Val Ala Phe | 27446 |
| 2795 2800 2805 | |
| gac ttc tcg gtc tgg gag ctg tgg ggc gcg ctg ctg cac ggc ggc Asp Phe Ser Val Trp Glu Leu Trp Gly Ala Leu Leu His Gly Gly | 27491 |
| 2810 2815 2820 | |
| cgc gtg gtc atg gtg ccg ttc gcc gtc tcc cgc tca ccg cgg gat Arg Val Val Met Val Pro Phe Ala Val Ser Arg Ser Pro Arg Asp | 27536 |
| 2825 2830 2835 | |
| ttc tgg gaa ctg ctc gtg cgc gag cgg gtc acc gtg ctc agc cag Phe Trp Glu Leu Leu Val Arg Glu Arg Val Thr Val Leu Ser Gln | 27581 |
| 2840 2845 2850 | |
| acg ccg tcc gcc ttc tac cag ctc gcc gcg gcc gcc gac gac acg Thr Pro Ser Ala Phe Tyr Gln Leu Ala Ala Ala Ala Asp Asp Thr | 27626 |
| 2855 2860 2865 | |
| ccg gac gcg ctg cgc gtg gtg gtc ttc ggc ggc gag gcc ctc gac Pro Asp Ala Leu Arg Val Val Val Phe Gly Gly Glu Ala Leu Asp | 27671 |
| 2870 2875 2880 | |
| ccg gga cgg ctc gcc gga tgg cgg gaa cgg cgc ccg gac gga ccg Pro Gly Arg Leu Ala Gly Trp Arg Glu Arg Arg Pro Asp Gly Pro | 27716 |
| 2885 2890 2895 | |
| cgc ctg gtc aac atg tac ggc atc acc gag acg acg gtc cac gtc Arg Leu Val Asn Met Tyr Gly Ile Thr Glu Thr Thr Val His Val | 27761 |
| 2900 2905 2910 | |
| acc cac cag gac ctc gca ccg gcc gac acc acc ggc agc ccc atc Thr His Gln Asp Leu Ala Pro Ala Asp Thr Thr Gly Ser Pro Ile | 27806 |
| 2915 2920 2925 | |

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|--|-------|
| gga cgc ggc ata ccg ggc ctg tcc gtc tac gtc ctc gac gag gcg Gly Arg Gly Ile Pro Gly Leu Ser Val Tyr Val Leu Asp Glu Ala | 27851 |
| 2930 2935 2940 | |
| ctg cgg ccg gtg ccg ccc ggg gtc gcc ggc gag gtg tac gtg gcc Leu Arg Pro Val Pro Pro Gly Val Ala Gly Glu Val Tyr Val Ala | 27896 |
| 2945 2950 2955 | |
| ggt cgc cag ctg gcc ccg gcc tac ctc ggc cgc gcc gcg ctg acc Gly Arg Gln Leu Ala Arg Ala Tyr Leu Gly Arg Ala Ala Leu Thr | 27941 |
| 2960 2965 2970 | |
| ggc acc cgc ttc gtc gcc tgc ccc ttc ctc ccg gcc ggg gaa ccg Gly Thr Arg Phe Val Ala Cys Pro Phe Leu Pro Ala Gly Glu Arg | 27986 |
| 2975 2980 2985 | |
| atg tac cgc acc ggc gac cgt gcc cgc tgg agc cgc ggc ccg ttg Met Tyr Arg Thr Gly Asp Arg Ala Arg Trp Ser Arg Gly Arg Leu | 28031 |
| 2990 2995 3000 | |
| cag ttc gcc ggg ccg acc gac gac cag gtg cag atc cgc ggc ttc Gln Phe Ala Gly Arg Thr Asp Asp Gln Val Gln Ile Arg Gly Phe | 28076 |
| 3005 3010 3015 | |
| cgc atc gaa ccg ggc gag gtg cag gcc gtc gtc gcc gcc cac cct Arg Ile Glu Pro Gly Glu Val Gln Ala Val Val Ala Ala His Pro | 28121 |
| 3020 3025 3030 | |
| gag atc gcc gcg gcg gcc gtc gtc gtc gtg ccg gag gac gtg ccc ggc Glu Ile Ala Ala Ala Ala Val Val Val Arg Glu Asp Val Pro Gly | 28166 |
| 3035 3040 3045 | |
| gac ccg cgc ctg acc gcc tac gtg gtg ccg gcc ggc ccg cgc acc Asp Pro Arg Leu Thr Ala Tyr Val Val Pro Ala Gly Pro Arg Thr | 28211 |
| 3050 3055 3060 | |
| gcg ccg gcg gcc gtc gcg gaa acc gtg ccg cgc ttc gcc gcc gac Ala Pro Ala Ala Val Ala Glu Thr Val Arg Arg Phe Ala Ala Asp | 28256 |
| 3065 3070 3075 | |
| ccg ctg ccg gcc tac atg ctt ccc tcc gcg gtc gtc gtg ctg gac Arg Leu Pro Ala Tyr Met Leu Pro Ser Ala Val Val Val Leu Asp | 28301 |
| 3080 3085 3090 | |
| gcc ctg ccg ctg acc gac cac ggc aag ctc gac ccg cgc gcc ctt Ala Leu Pro Leu Thr Asp His Gly Lys Leu Asp Arg Arg Ala Leu | 28346 |
| 3095 3100 3105 | |
| ccc gca ccg cag cac acg ggc gcc gcg agc ggc ccg gcg ccg gcc Pro Ala Pro Gln His Thr Gly Ala Ala Ser Gly Arg Ala Pro Ala | 28391 |
| 3110 3115 3120 | |
| acc gtg gcc gag gag gtg ctg tgc gcc gcc ttc gcc gag gtg ctg Thr Val Ala Glu Glu Val Leu Cys Ala Ala Phe Ala Glu Val Leu | 28436 |
| 3125 3130 3135 | |
| ggc gtc gag ccg gtc ggt gtc gac gac gac ttc ttc gcc ctc ggc Gly Val Glu Arg Val Gly Val Asp Asp Asp Phe Phe Ala Leu Gly | 28481 |
| 3140 3145 3150 | |
| ggc cac tcg ctg ctc atc gtc tcg ctc gtc gag cgc gtc cgc cgc Gly His Ser Leu Leu Ile Val Ser Leu Val Glu Arg Val Arg Arg | 28526 |
| 3155 3160 3165 | |

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|--|--|--|-------|
| gcc ggc ctg gcg atc Ala Gly Leu Ala Ile 3170 | cgc gtc cgc gcc ctg Pro Val Arg Ala Leu 3175 | ttc cgc agc gcc acc Phe Arg Ser Ala Thr 3180 | 28571 |
| cgc gcc ggg ctg gcc Pro Ala Gly Leu Ala 3185 | gcg ctc gcc cgg cgc Ala Leu Ala Arg Pro 3190 | tac cgg gtc gac atc Tyr Arg Val Asp Ile 3195 | 28616 |
| cgc ccc aac ctc gtc Pro Pro Asn Leu Val 3200 | cgc gac ggc gcc cgc Pro Asp Gly Ala Arg 3205 | gag atc acc cgc gac Glu Ile Thr Pro Asp 3210 | 28661 |
| atg ctg acc ctg gcc Met Leu Thr Leu Ala 3215 | gcg ctc acc gag gcc Ala Leu Thr Glu Ala 3220 | gag atc gcc acg gtg Glu Ile Ala Thr Val 3225 | 28706 |
| ctc gcg acc gtg ccc Leu Ala Thr Val Pro 3230 | ggc ggg gcg gtg aac Gly Gly Ala Val Asn 3235 | gtg gcc gac atc tat Val Ala Asp Ile Tyr 3240 | 28751 |
| cgc ctg gcc cgc ctc Pro Leu Ala Pro Leu 3245 | cag gag ggc atc ttc Gln Glu Gly Ile Phe 3250 | ttc cac cac ctc atg Phe His His Leu Met 3255 | 28796 |
| gcg gac gcc ggc cgg Ala Asp Ala Gly Arg 3260 | gcc gac gcc tac gcg Ala Asp Ala Tyr Ala 3265 | atg cgc tac gtg ctg Met Pro Tyr Val Leu 3270 | 28841 |
| cac ctg gac acg gcg His Leu Asp Thr Ala 3275 | gag cgg ctg gac gtc Glu Arg Leu Asp Val 3280 | ctc ctc ggc gcc ctc Leu Leu Gly Ala Leu 3285 | 28886 |
| cag cgg gtg atc gac Gln Arg Val Ile Asp 3290 | cgt aac gac atc tac Arg Asn Asp Ile Tyr 3295 | cgc acc ggc gtg gtc Arg Thr Gly Val Val 3300 | 28931 |
| tcg gcc ggc ctg cgc Ser Ala Gly Leu Arg 3305 | gaa cgc gtg cag gtg Glu Pro Val Gln Val 3310 | gtg tgg cgg tcg gcc Val Trp Arg Ser Ala 3315 | 28976 |
| gtc ctg ccc gtc gag Val Leu Pro Val Glu 3320 | gag gtg gcg ctg gac Glu Val Ala Leu Asp 3325 | ggc ggc cac gac cgc Gly Gly His Asp Pro 3330 | 29021 |
| gtc gag cag ttg ctc Val Glu Gln Leu Leu 3335 | gcc gcc gcc ggc gag Ala Ala Ala Gly Glu 3340 | gag ttc gac ctg acc Glu Phe Asp Leu Thr 3345 | 29066 |
| cgc gcg cgc ctg atc Arg Ala Pro Leu Ile 3350 | cgc gcg cac gtg gcg Arg Ala His Val Ala 3355 | gcg cat cgc gac ggc Ala His Pro Asp Gly 3360 | 29111 |
| ggc cgc ctg ctc ctg Gly Arg Leu Leu Leu 3365 | ctg cgc atc cac cac Leu Arg Ile His His 3370 | ctc gtg cag gac cac Leu Val Gln Asp His 3375 | 29156 |
| acg acg ttc gac gtg Thr Thr Phe Asp Val 3380 | gtg ctg ggc gag ctg Val Leu Gly Glu Leu 3385 | cgc gcc ttc ctc gag Arg Ala Phe Leu Glu 3390 | 29201 |
| ggc cgc ggc ggc gag Gly Arg Gly Gly Glu 3395 | ctt gcc gag cgc gtg Leu Ala Glu Pro Val 3400 | cgc ttc cgc gag ttc Pro Phe Arg Glu Phe 3405 | 29246 |

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|---------------------|---------------------|---------------------|-------|
| gtg gcg cag gcg cgg | ctc ggt gtg ccg cgc | gag gag cac gag cgg | 29291 |
| Val Ala Gln Ala Arg | Leu Gly Val Pro Arg | Glu Glu His Glu Arg | |
| 3410 | 3415 | 3420 | |
| tat ttc gcg gag ttg | ctc ggc gac gtc acc | gag acc acc gcg ccg | 29336 |
| Tyr Phe Ala Glu Leu | Leu Gly Asp Val Thr | Glu Thr Thr Ala Pro | |
| 3425 | 3430 | 3435 | |
| tac ggc ctg acc gac | gtg cac ggc gac ggc | tcc cgg gcc gtc cag | 29381 |
| Tyr Gly Leu Thr Asp | Val His Gly Asp Gly | Ser Arg Ala Val Gln | |
| 3440 | 3445 | 3450 | |
| gtc tcg ctg ccg gtc | gcc gag gcc ctc gcc | gtc cgc gtc cgc gag | 29426 |
| Val Ser Leu Pro Val | Ala Glu Ala Leu Ala | Val Arg Val Arg Glu | |
| 3455 | 3460 | 3465 | |
| gtg gcc cgg aca ctc | ggc gtc agc ccg gcc | acc gtc ttc cac ctg | 29471 |
| Val Ala Arg Thr Leu | Gly Val Ser Pro Ala | Thr Val Phe His Leu | |
| 3470 | 3475 | 3480 | |
| gcc tgg gcg cgc gtg | ctg agc gtc atc gcg | ggc cgc gac gac gtg | 29516 |
| Ala Trp Ala Arg Val | Leu Ser Val Ile Ala | Gly Arg Asp Asp Val | |
| 3485 | 3490 | 3495 | |
| gtg ttc gga acc atc | ctc ttc gga cgg atg | aac tcg ggc gcc gcc | 29561 |
| Val Phe Gly Thr Ile | Leu Phe Gly Arg Met | Asn Ser Gly Ala Ala | |
| 3500 | 3505 | 3510 | |
| gcc gaa cgc gtg ccc | ggc ctg ttc atc aac | acg ctg ccg gtg cgg | 29606 |
| Ala Glu Arg Val Pro | Gly Leu Phe Ile Asn | Thr Leu Pro Val Arg | |
| 3515 | 3520 | 3525 | |
| gtg cga ctg aac ggc | acg agc gtg ggg gag | gcg ctg acc gcc ctg | 29651 |
| Val Arg Leu Asn Gly | Thr Ser Val Gly Glu | Ala Leu Thr Ala Leu | |
| 3530 | 3535 | 3540 | |
| cgc gac cag atg gcc | gag ctg atg gcg cac | gag cac gcg ccg ctc | 29696 |
| Arg Asp Gln Met Ala | Glu Leu Met Ala His | Glu His Ala Pro Leu | |
| 3545 | 3550 | 3555 | |
| gcg ctg gcg cag cgg | gcc ggc ggc gtg ccc | gcg ggc agt ccg ctg | 29741 |
| Ala Leu Ala Gln Arg | Ala Gly Gly Val Pro | Ala Gly Ser Pro Leu | |
| 3560 | 3565 | 3570 | |
| ttc acg tcg ctg ttc | aac tat cgg cac aac | gtc gcg ggc ggc ggc | 29786 |
| Phe Thr Ser Leu Phe | Asn Tyr Arg His Asn | Val Ala Gly Gly Gly | |
| 3575 | 3580 | 3585 | |
| gac ggc gga gcg ctc | gag ggc gtc acg ccg | gtg ctg cac cgc gac | 29831 |
| Asp Gly Gly Ala Leu | Glu Gly Val Thr Pro | Val Leu His Arg Asp | |
| 3590 | 3595 | 3600 | |
| acc acg aac tat ccc | gtg gtg gtc tcg gtc | gac gac gac ggc acg | 29876 |
| Thr Thr Asn Tyr Pro | Val Val Val Ser Val | Asp Asp Asp Gly Thr | |
| 3605 | 3610 | 3615 | |
| agc ttc gac ctg gtg | gtg gag gcg gtc gcg | ccc gcg gag gcg ggt | 29921 |
| Ser Phe Asp Leu Val | Val Glu Ala Val Ala | Pro Ala Glu Ala Gly | |
| 3620 | 3625 | 3630 | |
| cgc gtc ggg cgg ctc | atg cac gaa tgc ctg | gcc gag ctg gtg ggc | 29966 |
| Arg Val Gly Arg Leu | Met His Glu Cys Leu | Ala Glu Leu Val Gly | |
| 3635 | 3640 | 3645 | |

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|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-------|
| gcc | ctg | gcc | ggt | gcg | ccg | gag | acg | ccc | ctg | tcc | cgc | gtg | cgg | gtg | 30011 |
| Ala | Leu | Ala | Gly | Ala | Pro | Glu | Thr | Pro | Leu | Ser | Arg | Val | Arg | Val | |
| | | | | 3650 | | | | | 3655 | | | | | 3660 | |
| atc | gac | gag | gcc | gag | atc | gaa | cgg | gtc | gtt | cac | agc | tgg | aac | gac | 30056 |
| Ile | Asp | Glu | Ala | Glu | Ile | Glu | Arg | Val | Val | His | Ser | Trp | Asn | Asp | |
| | | | | 3665 | | | | | 3670 | | | | | 3675 | |
| acg | gct | cgc | ccg | gta | gtg | gag | tcg | tcg | gtg | ccg | gcg | ttg | ttc | gcc | 30101 |
| Thr | Ala | Arg | Pro | Val | Val | Glu | Ser | Ser | Val | Pro | Ala | Leu | Phe | Ala | |
| | | | | 3680 | | | | | 3685 | | | | | 3690 | |
| gag | cag | gtg | gcg | gct | gcg | ccg | gat | gcg | acg | gcg | gtg | gtg | ggc | gag | 30146 |
| Glu | Gln | Val | Ala | Ala | Ala | Pro | Asp | Ala | Thr | Ala | Val | Val | Gly | Glu | |
| | | | | 3695 | | | | | 3700 | | | | | 3705 | |
| ggt | gtg | tcg | tgg | tct | tat | cgc | gag | ctt | gat | gcg | cga | tcg | gat | gcg | 30191 |
| Gly | Val | Ser | Trp | Ser | Tyr | Arg | Glu | Leu | Asp | Ala | Arg | Ser | Asp | Ala | |
| | | | | 3710 | | | | | 3715 | | | | | 3720 | |
| ctg | gcc | cgg | agc | ctg | gtg | gcg | gcc | ggt | gtg | ggt | gtg | gag | tcg | ccg | 30236 |
| Leu | Ala | Arg | Ser | Leu | Val | Ala | Ala | Gly | Val | Gly | Val | Glu | Ser | Pro | |
| | | | | 3725 | | | | | 3730 | | | | | 3735 | |
| gtg | gtg | gtg | gcg | ttg | gag | cgg | tct | ccc | gag | gtg | ctg | tcc | gcg | ttc | 30281 |
| Val | Val | Val | Ala | Leu | Glu | Arg | Ser | Pro | Glu | Val | Leu | Ser | Ala | Phe | |
| | | | | 3740 | | | | | 3745 | | | | | 3750 | |
| ctg | gcg | gtg | gcg | aag | gcc | ggg | ggc | gtg | ttt | gtt | ccg | gtg | gac | ctt | 30326 |
| Leu | Ala | Val | Ala | Lys | Ala | Gly | Gly | Val | Phe | Val | Pro | Val | Asp | Leu | |
| | | | | 3755 | | | | | 3760 | | | | | 3765 | |
| tcg | tgg | ccg | cag | gcg | cgt | atc | gat | gcg | gtg | gtt | gct | gac | tgt | gcc | 30371 |
| Ser | Trp | Pro | Gln | Ala | Arg | Ile | Asp | Ala | Val | Val | Ala | Asp | Cys | Ala | |
| | | | | 3770 | | | | | 3775 | | | | | 3780 | |
| gcg | cgg | gtt | gcg | gtg | gct | gac | cgg | ccg | atg | agc | ggg | ctg | acg | gtc | 30416 |
| Ala | Arg | Val | Ala | Val | Ala | Asp | Arg | Pro | Met | Ser | Gly | Leu | Thr | Val | |
| | | | | 3785 | | | | | 3790 | | | | | 3795 | |
| gtg | ccg | gcc | gac | cag | gtc | ggg | gat | tcg | gct | gtc | gtc | ctg | ccg | gcc | 30461 |
| Val | Pro | Ala | Asp | Gln | Val | Gly | Asp | Ser | Ala | Val | Val | Leu | Pro | Ala | |
| | | | | 3800 | | | | | 3805 | | | | | 3810 | |
| ggt | ccg | gtg | ccg | ggt | gcg | gcg | gtc | tac | cgg | atg | tac | acc | tcc | ggc | 30506 |
| Gly | Pro | Val | Pro | Gly | Ala | Ala | Val | Tyr | Arg | Met | Tyr | Thr | Ser | Gly | |
| | | | | 3815 | | | | | 3820 | | | | | 3825 | |
| tcc | acg | ggc | cgg | ccc | aag | ggt | gtg | gtg | acc | acc | cac | cag | aac | ctc | 30551 |
| Ser | Thr | Gly | Arg | Pro | Lys | Gly | Val | Val | Thr | Thr | His | Gln | Asn | Leu | |
| | | | | 3830 | | | | | 3835 | | | | | 3840 | |
| gtg | gat | ttg | gcg | acc | gac | acg | tgt | tgg | ggt | ccg | acc | ccg | cgg | gtg | 30596 |
| Val | Asp | Leu | Ala | Thr | Asp | Thr | Cys | Trp | Gly | Pro | Thr | Pro | Arg | Val | |
| | | | | 3845 | | | | | 3850 | | | | | 3855 | |
| ttg | ttc | cat | gcc | ccg | cac | gcg | ttt | gat | gcg | tcg | tcg | tat | gag | atc | 30641 |
| Leu | Phe | His | Ala | Pro | His | Ala | Phe | Asp | Ala | Ser | Ser | Tyr | Glu | Ile | |
| | | | | 3860 | | | | | 3865 | | | | | 3870 | |
| tgg | gtg | ccg | ttg | ttg | aat | ggc | ggc | acg | gtc | gtg | gtc | gct | ccg | cag | 30686 |
| Trp | Val | Pro | Leu | Leu | Asn | Gly | Gly | Thr | Val | Val | Val | Ala | Pro | Gln | |
| | | | | 3875 | | | | | 3880 | | | | | 3885 | |

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|--|-------|
| cgc agc atc gac gcg acg gtc ttg agg gac ctg atc cgc ggg cat Arg Ser Ile Asp Ala Thr Val Leu Arg Asp Leu Ile Arg Gly His 3890 3895 3900 | 30731 |
| gag ttg acg cac gtg cat gtg acc gcc ggt ctg ttg cgg gtg ctg Glu Leu Thr His Val His Val Thr Ala Gly Leu Leu Arg Val Leu 3905 3910 3915 | 30776 |
| gac ccg tcg tgt ttt gcg ggg ctg acc gag gtt ttg acc ggc ggg Asp Pro Ser Cys Phe Ala Gly Leu Thr Glu Val Leu Thr Gly Gly 3920 3925 3930 | 30821 |
| gat gcg gtg tcg gcg gag gcg gtg cgc cgg gtc cgg gaa gcg aac Asp Ala Val Ser Ala Glu Ala Val Arg Arg Val Arg Glu Ala Asn 3935 3940 3945 | 30866 |
| ccg ggt ctg cgg gtg cgg cag ctt tat ggc ccg acc gag gtg acc Pro Gly Leu Arg Val Arg Gln Leu Tyr Gly Pro Thr Glu Val Thr 3950 3955 3960 | 30911 |
| ttg tgc gcg acg cag cat ctg ctg gtc gac ggg gtg ccg atc ggg Leu Cys Ala Thr Gln His Leu Leu Val Asp Gly Val Pro Ile Gly 3965 3970 3975 | 30956 |
| cgg ccg ttg gac aac acc cgc gtg tat gtc ctg gat gac ttg ctg Arg Pro Leu Asp Asn Thr Arg Val Tyr Val Leu Asp Asp Leu Leu 3980 3985 3990 | 31001 |
| cag ccg gtc ccg gtc ggt gtg act ggc gag ctg tat gtg gcc ggg Gln Pro Val Pro Val Gly Val Thr Gly Glu Leu Tyr Val Ala Gly 3995 4000 4005 | 31046 |
| gcc ggc ttg gcg cgt ggc tat gcg ggc atg ccc ggg ttg acg gcc Ala Gly Leu Ala Arg Gly Tyr Ala Gly Met Pro Gly Leu Thr Ala 4010 4015 4020 | 31091 |
| gag cgg ttc gtc gcc gac ccg ttc tcg gtt ggt ggt cgc ctc tac Glu Arg Phe Val Ala Asp Pro Phe Ser Val Gly Gly Arg Leu Tyr 4025 4030 4035 | 31136 |
| cgc acg ggt gat ctg gtc cgc tgg act gac gac ggg gtg ctg cat Arg Thr Gly Asp Leu Val Arg Trp Thr Asp Asp Gly Val Leu His 4040 4045 4050 | 31181 |
| ttc gcc ggg cgg gcc gat gat cag gtg aag att cgt ggc tat cgg Phe Ala Gly Arg Ala Asp Asp Gln Val Lys Ile Arg Gly Tyr Arg 4055 4060 4065 | 31226 |
| gtg gag ccg ggc gag gtt gaa gcg gtc ctg gct caa cac ccc gac Val Glu Pro Gly Glu Val Glu Ala Val Leu Ala Gln His Pro Asp 4070 4075 4080 | 31271 |
| gtc agc cag gtg gca gtg gtc gtc cgc gag gac acg cca ggg gat Val Ser Gln Val Ala Val Val Val Arg Glu Asp Thr Pro Gly Asp 4085 4090 4095 | 31316 |
| aag cgg ctg gtc gcc tat gtc gtc ggc ggt gac gtc gag gcg tat Lys Arg Leu Val Ala Tyr Val Val Gly Gly Asp Val Glu Ala Tyr 4100 4105 4110 | 31361 |
| gcg cag gag cgc ctt ccg ggc tac ctg gtc ccg tcg gca ttc gta Ala Gln Glu Arg Leu Pro Gly Tyr Leu Val Pro Ser Ala Phe Val 4115 4120 4125 | 31406 |

APPENDIX A

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-------|
| cat | ctg | gat | gcg | ctg | ccg | ctg | acc | agc | aac | cag | aag | gtc | gac | cgg | 31451 |
| His | Leu | Asp | Ala | Leu | Pro | Leu | Thr | Ser | Asn | Gln | Lys | Val | Asp | Arg | |
| | | | | 4130 | | | | | 4135 | | | | | 4140 | |
| gcc | gca | ctg | ccc | gcg | ccg | tcc | gtg | gag | tcc | ggc | gtc | ggg | cgg | gcg | 31496 |
| Ala | Ala | Leu | Pro | Ala | Pro | Ser | Val | Glu | Ser | Gly | Val | Gly | Arg | Ala | |
| | | | | 4145 | | | | | 4150 | | | | | 4155 | |
| ccc | gcc | gac | gcg | cgt | gaa | gag | ctg | atg | tgt | gcc | gcg | ttc | gct | gag | 31541 |
| Pro | Ala | Asp | Ala | Arg | Glu | Glu | Leu | Met | Cys | Ala | Ala | Phe | Ala | Glu | |
| | | | | 4160 | | | | | 4165 | | | | | 4170 | |
| gtg | ctc | gac | ctg | gat | cgg | gtc | ggg | gtc | gac | gac | gac | ttc | ttc | gct | 31586 |
| Val | Leu | Asp | Leu | Asp | Arg | Val | Gly | Val | Asp | Asp | Asp | Phe | Phe | Ala | |
| | | | | 4175 | | | | | 4180 | | | | | 4185 | |
| ttg | ggg | ggg | cat | tcg | ctg | ttg | gtg | gtg | cgg | ttg | gtg | ggc | cgt | att | 31631 |
| Leu | Gly | Gly | His | Ser | Leu | Leu | Val | Val | Arg | Leu | Val | Gly | Arg | Ile | |
| | | | | 4190 | | | | | 4195 | | | | | 4200 | |
| cgg | cag | gtg | ttc | ggg | gtg | gag | gtg | tcg | gct | cgg | ctg | gtc | ttc | gat | 31676 |
| Arg | Gln | Val | Phe | Gly | Val | Glu | Val | Ser | Ala | Arg | Leu | Val | Phe | Asp | |
| | | | | 4205 | | | | | 4210 | | | | | 4215 | |
| gcg | cgg | act | ccg | gcc | ggg | gtg | gtg | gcc | cgc | ttg | tcc | gag | ggc | ggc | 31721 |
| Ala | Arg | Thr | Pro | Ala | Gly | Val | Val | Ala | Arg | Leu | Ser | Glu | Gly | Gly | |
| | | | | 4220 | | | | | 4225 | | | | | 4230 | |
| acg | gcc | cgg | gag | gcc | gta | cgg | gcg | cgg | gtg | cgt | ccg | gcg | cgg | gtg | 31766 |
| Thr | Ala | Arg | Glu | Ala | Val | Arg | Ala | Arg | Val | Arg | Pro | Ala | Arg | Val | |
| | | | | 4235 | | | | | 4240 | | | | | 4245 | |
| ccg | ttg | tcg | ttc | gcg | caa | cgc | cgg | ttg | tgg | ttc | ctg | tcc | cag | ctg | 31811 |
| Pro | Leu | Ser | Phe | Ala | Gln | Arg | Arg | Leu | Trp | Phe | Leu | Ser | Gln | Leu | |
| | | | | 4250 | | | | | 4255 | | | | | 4260 | |
| gag | ggg | ccg | agc | gcg | acc | tac | aac | atc | ccg | gtg | gcg | ctg | cgg | ctg | 31856 |
| Glu | Gly | Pro | Ser | Ala | Thr | Tyr | Asn | Ile | Pro | Val | Ala | Leu | Arg | Leu | |
| | | | | 4265 | | | | | 4270 | | | | | 4275 | |
| gac | ggg | cct | ctg | gat | cgc | gat | gct | cta | acg | gcg | gcg | ttg | cac | gat | 31901 |
| Asp | Gly | Pro | Leu | Asp | Arg | Asp | Ala | Leu | Thr | Ala | Ala | Leu | His | Asp | |
| | | | | 4280 | | | | | 4285 | | | | | 4290 | |
| gtg | gtg | gcc | cgg | cac | gag | gtg | ttg | cgt | acc | gtc | ttc | acc | gtc | gcc | 31946 |
| Val | Val | Ala | Arg | His | Glu | Val | Leu | Arg | Thr | Val | Phe | Thr | Val | Ala | |
| | | | | 4295 | | | | | 4300 | | | | | 4305 | |
| gac | ggc | gag | ccg | tgg | caa | cag | atc | ctc | gac | gat | ccg | cag | gtc | tcc | 31991 |
| Asp | Gly | Glu | Pro | Trp | Gln | Gln | Ile | Leu | Asp | Asp | Pro | Gln | Val | Ser | |
| | | | | 4310 | | | | | 4315 | | | | | 4320 | |
| gtt | ccg | gtc | gtc | gag | gtc | acg | ccc | gac | cgg | ctg | ccc | gag | gcg | gtg | 32036 |
| Val | Pro | Val | Val | Glu | Val | Thr | Pro | Asp | Arg | Leu | Pro | Glu | Ala | Val | |
| | | | | 4325 | | | | | 4330 | | | | | 4335 | |
| gcc | gtc | gcc | gcg | ggg | cac | cgg | ttc | gac | ctc | ggc | cgg | gaa | ctg | ccg | 32081 |
| Ala | Val | Ala | Ala | Gly | His | Arg | Phe | Asp | Leu | Gly | Arg | Glu | Leu | Pro | |
| | | | | 4340 | | | | | 4345 | | | | | 4350 | |
| ctg | cgg | gcg | gtc | ctg | ctg | gcg | acc | ggc | gac | gac | gtg | cac | gtg | ctg | 32126 |
| Leu | Arg | Ala | Val | Leu | Leu | Ala | Thr | Gly | Asp | Asp | Val | His | Val | Leu | |
| | | | | 4355 | | | | | 4360 | | | | | 4365 | |

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| | | | |
|---------------------|---------------------|---------------------|-------|
| gtg ctc gtg gtg cat | cac att gcc gcc gac | ggc tgg tgg atg cgg | 32171 |
| Val Leu Val Val His | His Ile Ala Ala Asp | Gly Trp Ser Met Arg | |
| 4370 | 4375 | 4380 | |
| ccg ctc gcc cgg gac | ttg gcg gcc gcc tac | gcg gcc agg atc gac | 32216 |
| Pro Leu Ala Arg Asp | Leu Ala Ala Ala Tyr | Ala Ala Arg Ile Asp | |
| 4385 | 4390 | 4395 | |
| gcg acg gcg ccg gcc | ctc ggc gcg ctg ccg | gtg cag tac gcc gac | 32261 |
| Ala Thr Ala Pro Ala | Leu Gly Ala Leu Pro | Val Gln Tyr Ala Asp | |
| 4400 | 4405 | 4410 | |
| tac gcc ctc tgg cag | cgc gac gtg ctc ggt | tcc gag cac gac ccg | 32306 |
| Tyr Ala Leu Trp Gln | Arg Asp Val Leu Gly | Ser Glu His Asp Pro | |
| 4415 | 4420 | 4425 | |
| gac agc gtc atc tcc | caa cag gtt gcc tat | tgg cgg cgg cag ctg | 32351 |
| Asp Ser Val Ile Ser | Gln Gln Val Ala Tyr | Trp Arg Arg Gln Leu | |
| 4430 | 4435 | 4440 | |
| gcc ggc gta ccg gag | gaa ttg gat ctg ccg | gtg gac cgg gcg cgc | 32396 |
| Ala Gly Val Pro Glu | Glu Leu Asp Leu Pro | Val Asp Arg Ala Arg | |
| 4445 | 4450 | 4455 | |
| ccg gcc gag gca tgc | cat cgc ggc cac acc | gtg gag ttc gcc gtg | 32441 |
| Pro Ala Glu Ala Ser | His Arg Gly His Thr | Val Glu Phe Ala Val | |
| 4460 | 4465 | 4470 | |
| ccc ccg gcc gtg cac | cac caa ctc gcc gaa | ctc gcc cgc cgc aac | 32486 |
| Pro Pro Ala Val His | His Gln Leu Ala Glu | Leu Ala Arg Arg Asn | |
| 4475 | 4480 | 4485 | |
| ggc gtc acc gtc ttc | atg acc gtg caa acc | gcc ctc gcc gtc ctc | 32531 |
| Gly Val Thr Val Phe | Met Thr Val Gln Thr | Ala Leu Ala Val Leu | |
| 4490 | 4495 | 4500 | |
| ctg tcc aaa ctc ggc | gcc ggc acc gac atc | ccc atc ggc gtc gcc | 32576 |
| Leu Ser Lys Leu Gly | Ala Gly Thr Asp Ile | Pro Ile Gly Val Ala | |
| 4505 | 4510 | 4515 | |
| gtc gcc gga cgc acc | gac ccc acc ctc gac | aac ctc atc ggc ttc | 32621 |
| Val Ala Gly Arg Thr | Asp Pro Thr Leu Asp | Asn Leu Ile Gly Phe | |
| 4520 | 4525 | 4530 | |
| ttc gtc aac acc ctc | gtc cta cgc acc gac | ctg acc ggc aac ccc | 32666 |
| Phe Val Asn Thr Leu | Val Leu Arg Thr Asp | Leu Thr Gly Asn Pro | |
| 4535 | 4540 | 4545 | |
| acc atc acc gac ctg | ctg cac cgc acc cgc | gac acc acc ctg cac | 32711 |
| Thr Ile Thr Asp Leu | Leu His Arg Thr Arg | Asp Thr Thr Leu His | |
| 4550 | 4555 | 4560 | |
| gcc ttc acc cac caa | gac gtc ccc ttc gaa | aaa ctc gtc gaa gac | 32756 |
| Ala Phe Thr His Gln | Asp Val Pro Phe Glu | Lys Leu Val Glu Asp | |
| 4565 | 4570 | 4575 | |
| ctc gca ccc acc cgc | tcc ctc gcc cgc cac | ccc ctc ttc cag gtc | 32801 |
| Leu Ala Pro Thr Arg | Ser Leu Ala Arg His | Pro Leu Phe Gln Val | |
| 4580 | 4585 | 4590 | |
| atg atg acc ctg cag | agc gcg tgc gcg gac | gaa gag ccg ctg gcg | 32846 |
| Met Met Thr Leu Gln | Ser Ala Ser Ala Asp | Glu Glu Pro Leu Ala | |
| 4595 | 4600 | 4605 | |

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| | | | |
|---------------------|---------------------|---------------------|-------|
| ctc gcc ggg ctg cgg | gtc acc gac ctc ccg | gcc ggg gag aca ccc | 32891 |
| Leu Ala Gly Leu Arg | Val Thr Asp Leu Pro | Ala Gly Glu Thr Pro | |
| 4610 | 4615 | 4620 | |
| gcc aag gtg gac ctc | gac ctg acg ctg cac | gag gtg gcg ggc cga | 32936 |
| Ala Lys Val Asp Leu | Asp Leu Thr Leu His | Glu Val Ala Gly Arg | |
| 4625 | 4630 | 4635 | |
| gac ggc atg cac gcc | acg ctc ctc ggc gcg | gcc gac ctc ttc gag | 32981 |
| Asp Gly Met His Ala | Thr Leu Leu Gly Ala | Ala Asp Leu Phe Glu | |
| 4640 | 4645 | 4650 | |
| cag gag acg gtg cgc | gcc ctc gcc gac cgg | ttg ctg cga acc ctg | 33026 |
| Gln Glu Thr Val Arg | Ala Leu Ala Asp Arg | Leu Leu Arg Thr Leu | |
| 4655 | 4660 | 4665 | |
| gaa gcc atg gcg gcg | gcc ccg gac gac cgc | ctc gac cgg atc gag | 33071 |
| Glu Ala Met Ala Ala | Ala Pro Asp Asp Arg | Leu Asp Arg Ile Glu | |
| 4670 | 4675 | 4680 | |
| gtg ctg tcg ccg ggg | gag cgg tcg ccg ctg | ctg gtg gag tgg aac | 33116 |
| Val Leu Ser Pro Gly | Glu Arg Ser Arg Leu | Leu Val Glu Trp Asn | |
| 4685 | 4690 | 4695 | |
| gac acg gct cgt ccg | gtg gtg gag tcg tcg | gtg ccg gcg ttg ttc | 33161 |
| Asp Thr Ala Arg Pro | Val Val Glu Ser Ser | Val Pro Ala Leu Phe | |
| 4700 | 4705 | 4710 | |
| gcc gag cag gtg gcg | gct gcg ccg gac gcg | gtc gcg gtg gtg ggc | 33206 |
| Ala Glu Gln Val Ala | Ala Ala Pro Asp Ala | Val Ala Val Val Gly | |
| 4715 | 4720 | 4725 | |
| gag ggt gtg tcg tgg | acc tat cgc gag ctt | gat gcg cgg tcg gat | 33251 |
| Glu Gly Val Ser Trp | Thr Tyr Arg Glu Leu | Asp Ala Arg Ser Asp | |
| 4730 | 4735 | 4740 | |
| gcg ttg gcg ccg agc | ctg gtg gcg gcg ggt | gtg ggt gtg gag tcg | 33296 |
| Ala Leu Ala Arg Ser | Leu Val Ala Ala Gly | Val Gly Val Glu Ser | |
| 4745 | 4750 | 4755 | |
| ccg gtg gtg gtg gcg | ttg gag ccg tct ccg | gag gtg ctg tcc gcg | 33341 |
| Pro Val Val Val Ala | Leu Glu Arg Ser Pro | Glu Val Leu Ser Ala | |
| 4760 | 4765 | 4770 | |
| ttt ttg gcg gtg gcg | aag gcc ggg ggc gtg | ttt gtt ccg gtg gat | 33386 |
| Phe Leu Ala Val Ala | Lys Ala Gly Gly Val | Phe Val Pro Val Asp | |
| 4775 | 4780 | 4785 | |
| ttg tcg tgg ccg cag | gcg cgt gtc gat gcg | gtg gtt gcg gac tgc | 33431 |
| Leu Ser Trp Pro Gln | Ala Arg Val Asp Ala | Val Val Ala Asp Cys | |
| 4790 | 4795 | 4800 | |
| ggc gcg ccg att gcg | gtg gct gac ccg ccg | atg agc ggg ctg acg | 33476 |
| Gly Ala Arg Ile Ala | Val Ala Asp Arg Pro | Met Ser Gly Leu Thr | |
| 4805 | 4810 | 4815 | |
| gtc gtg tcc gcc ggc | ctg ggc ggg gat tcg | gcc gtc gtg tcc ggc | 33521 |
| Val Val Ser Ala Gly | Leu Gly Gly Asp Ser | Ala Val Val Ser Gly | |
| 4820 | 4825 | 4830 | |
| gac ctg acc gcg gat | ccg gcc gtt gtg ttg | ccg gcc ggt ccg gtg | 33566 |
| Asp Leu Thr Ala Asp | Arg Ala Val Val Leu | Pro Ala Gly Pro Val | |
| 4835 | 4840 | 4845 | |

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|---------------------|---------------------|---------------------|-------|
| ccg ggt gcg gcg gtc | tac cgc atg tac acc | tcg ggt tcc acg ggt | 33611 |
| Pro Gly Ala Ala Val | Tyr Arg Met Tyr Thr | Ser Gly Ser Thr Gly | |
| 4850 | 4855 | 4860 | |
| cgg ccc aag ggt gtg | gtg acc acc cac cag | aac ctc gtg gat ttg | 33656 |
| Arg Pro Lys Gly Val | Val Thr Thr His Gln | Asn Leu Val Asp Leu | |
| 4865 | 4870 | 4875 | |
| gcg acc gac acg tgt | tgg ggt ccg acc ccg | cgg gtg ctt ttc cac | 33701 |
| Ala Thr Asp Thr Cys | Trp Gly Pro Thr Pro | Arg Val Leu Phe His | |
| 4880 | 4885 | 4890 | |
| gcc ccg cac gcc ttc | gac gcg tcg tcg tat | gag att tgg gtg ccg | 33746 |
| Ala Pro His Ala Phe | Asp Ala Ser Ser Tyr | Glu Ile Trp Val Pro | |
| 4895 | 4900 | 4905 | |
| ttg ttg aat ggc ggc | acg gtc gtg gtg gct | ccg cgg cgc agc atc | 33791 |
| Leu Leu Asn Gly Gly | Thr Val Val Val Ala | Pro Arg Arg Ser Ile | |
| 4910 | 4915 | 4920 | |
| gac gcg acg gtc ttg | agg gac ctg atc ggc | gcg cat gag ttg acg | 33836 |
| Asp Ala Thr Val Leu | Arg Asp Leu Ile Gly | Ala His Glu Leu Thr | |
| 4925 | 4930 | 4935 | |
| cac gtg cat gtg acc | gcg ggc ttg ttg ccg | gtg ctg gac ccg tcg | 33881 |
| His Val His Val Thr | Ala Gly Leu Leu Arg | Val Leu Asp Pro Ser | |
| 4940 | 4945 | 4950 | |
| tgc ttc gcg ggc ctg | acc gag gtg ctc acg | ggc ggg gat gcg gtg | 33926 |
| Cys Phe Ala Gly Leu | Thr Glu Val Leu Thr | Gly Gly Asp Ala Val | |
| 4955 | 4960 | 4965 | |
| tcg gcc gag gcg gtg | cgc cgc gtc aaa gac | gcg aat ccg ggt ctg | 33971 |
| Ser Ala Glu Ala Val | Arg Arg Val Lys Asp | Ala Asn Pro Gly Leu | |
| 4970 | 4975 | 4980 | |
| cgg gtg cgg cag ctg | tac ggc ccg acc gag | gtg acc ttg tgc gcc | 34016 |
| Arg Val Arg Gln Leu | Tyr Gly Pro Thr Glu | Val Thr Leu Cys Ala | |
| 4985 | 4990 | 4995 | |
| acg cag cat ctg ctg | gat gac ggg gtg ccg | atc ggg cgg ccg ttg | 34061 |
| Thr Gln His Leu Leu | Asp Asp Gly Val Pro | Ile Gly Arg Pro Leu | |
| 5000 | 5005 | 5010 | |
| gac aac acc cgc gtc | tac gtt ctc gac gac | ctc ctg cgg ccg gtc | 34106 |
| Asp Asn Thr Arg Val | Tyr Val Leu Asp Asp | Leu Leu Arg Pro Val | |
| 5015 | 5020 | 5025 | |
| ccg aca ggt gtg gtg | ggg gag ctg tat gtg | gcc ggg tcg ggt ctg | 34151 |
| Pro Thr Gly Val Val | Gly Glu Leu Tyr Val | Ala Gly Ser Gly Leu | |
| 5030 | 5035 | 5040 | |
| gcg cgg ggc tat gcg | ggc atg ccc ggg ttg | acg gcc gag cga ttc | 34196 |
| Ala Arg Gly Tyr Ala | Gly Met Pro Gly Leu | Thr Ala Glu Arg Phe | |
| 5045 | 5050 | 5055 | |
| gtc gcc gac cca ttc | aac acc ggc ggt cgc | ctc tac cgc acg ggt | 34241 |
| Val Ala Asp Pro Phe | Asn Thr Gly Gly Arg | Leu Tyr Arg Thr Gly | |
| 5060 | 5065 | 5070 | |
| gat ctg gtg cgg tgg | gcc gac gat ggt gtg | ctg cat ttc gct ggg | 34286 |
| Asp Leu Val Arg Trp | Ala Asp Asp Gly Val | Leu His Phe Ala Gly | |
| 5075 | 5080 | 5085 | |

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| | |
|--|-------|
| cgg gcc gat gat cag gtg aag att cgt ggc tat cgg gtg gag ccg Arg Ala Asp Asp Gln Val Lys Ile Arg Gly Tyr Arg Val Glu Pro 5090 5095 5100 | 34331 |
| ggc gag gtt gaa gcg gtc ctg gct caa cac ccc gac gtc agc cag Gly Glu Val Glu Ala Val Leu Ala Gln His Pro Asp Val Ser Gln 5105 5110 5115 | 34376 |
| gta gca gtg gtc gtc cgc gag gac acc cca ggc gac aag cgc ctg Val Ala Val Val Val Arg Glu Asp Thr Pro Gly Asp Lys Arg Leu 5120 5125 5130 | 34421 |
| gtc gcc tac gtc gtc ggc ggg gat gtc gag gcg tat gcg cag gag Val Ala Tyr Val Val Gly Gly Asp Val Glu Ala Tyr Ala Gln Glu 5135 5140 5145 | 34466 |
| cgc ctt ccg ggc tac atg gtt ccg tcg gct ttc gtg cag ttg gat Arg Leu Pro Gly Tyr Met Val Pro Ser Ala Phe Val Gln Leu Asp 5150 5155 5160 | 34511 |
| gcg ctg ccg ctg acc agc aac cag aag gtc gac cgg gcc gct ctc Ala Leu Pro Leu Thr Ser Asn Gln Lys Val Asp Arg Ala Ala Leu 5165 5170 5175 | 34556 |
| ccg gcg cca tcc atg gag tct ggc gcc ggc cgg gca ccc gcc gac Pro Ala Pro Ser Met Glu Ser Gly Ala Gly Arg Ala Pro Ala Asp 5180 5185 5190 | 34601 |
| gcg cgt gaa gag ctg atg tgt gcc gcg ttc gcc gag gtg ctc gac Ala Arg Glu Glu Leu Met Cys Ala Ala Phe Ala Glu Val Leu Asp 5195 5200 5205 | 34646 |
| ctg gat cgg gtc ggt gtc gac gac gac ttc ttc gcc ctc ggc ggg Leu Asp Arg Val Gly Val Asp Asp Asp Phe Phe Ala Leu Gly Gly 5210 5215 5220 | 34691 |
| cat tcg ctg ctc gcc gtc tcc ctc gtg gag aat ctg cgc cgc cac His Ser Leu Leu Ala Val Ser Leu Val Glu Asn Leu Arg Arg His 5225 5230 5235 | 34736 |
| ggc gtt cac atc tcc gtt cgg gcc ctc ttc gcc acc ccc acg ccg Gly Val His Ile Ser Val Arg Ala Leu Phe Ala Thr Pro Thr Pro 5240 5245 5250 | 34781 |
| gcc gcg ctg gcc gcc tcg gcg gga acc gcc gtc ccg gac gtg ccg Ala Ala Leu Ala Ala Ser Ala Gly Thr Ala Val Pro Asp Val Pro 5255 5260 5265 | 34826 |
| ccc aac ctc atc ccc cag ggc ggc gcc cag gaa ctg acc ccc gac Pro Asn Leu Ile Pro Gln Gly Gly Ala Gln Glu Leu Thr Pro Asp 5270 5275 5280 | 34871 |
| atg ctg ccc ctg gtc gac ctg acc ggc gag gaa ctg gcc acc atc Met Leu Pro Leu Val Asp Leu Thr Gly Glu Glu Leu Ala Thr Ile 5285 5290 5295 | 34916 |
| gtg gcc gcg gtg ccc ggc ggc gct ccc aac atc gcc gac atc tac Val Ala Ala Val Pro Gly Gly Ala Pro Asn Ile Ala Asp Ile Tyr 5300 5305 5310 | 34961 |
| ccc cta gcc ccg ctg caa gag ggc atc ttc ttc cac cac ctc atg Pro Leu Ala Pro Leu Gln Glu Gly Ile Phe Phe His His Leu Met 5315 5320 5325 | 35006 |

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| | | | |
|---------------------|---------------------|---------------------|-------|
| acc gag ggc gat gcc | acc gac gtc tac ctc | ctg ccg cgg att ctc | 35051 |
| Thr Glu Gly Asp Ala | Thr Asp Val Tyr Leu | Leu Pro Arg Ile Leu | |
| 5330 | 5335 | 5340 | |
| ggc ttc ggc ggc cgt | ccc gag ctg gac gcc | ttc ctc ggg gcc ctg | 35096 |
| Gly Phe Gly Gly Arg | Pro Glu Leu Asp Ala | Phe Leu Gly Ala Leu | |
| 5345 | 5350 | 5355 | |
| cag cag gtg gtg gac | cgc cac gac gtc tat | cgc acg gcc atc gcc | 35141 |
| Gln Gln Val Val Asp | Arg His Asp Val Tyr | Arg Thr Ala Ile Ala | |
| 5360 | 5365 | 5370 | |
| tgg cag aac ctg cgc | gag ccc gtc cag gtc | gtg cac cgc cac gcc | 35186 |
| Trp Gln Asn Leu Arg | Glu Pro Val Gln Val | Val His Arg His Ala | |
| 5375 | 5380 | 5385 | |
| acc ctg ccc gtc acc | gaa gtc acc ccc gac | cag ctg cac gcc gcc | 35231 |
| Thr Leu Pro Val Thr | Glu Val Thr Pro Asp | Gln Leu His Ala Ala | |
| 5390 | 5395 | 5400 | |
| gcc acc ggc ggc cgg | ctc ccg ctc gac cac | gca ccc ctg ctc agc | 35276 |
| Ala Thr Gly Gly Arg | Leu Pro Leu Asp His | Ala Pro Leu Leu Ser | |
| 5405 | 5410 | 5415 | |
| gtc cac atc gca ccc | gaa ccc gac ggc ggc | tgg ctc gcc ctg ctc | 35321 |
| Val His Ile Ala Pro | Glu Pro Asp Gly Gly | Trp Leu Ala Leu Leu | |
| 5420 | 5425 | 5430 | |
| cgc atg cac cac ctc | gtg cag gac cac acc | gcc ctc gac atc gtc | 35366 |
| Arg Met His His Leu | Val Gln Asp His Thr | Ala Leu Asp Ile Val | |
| 5435 | 5440 | 5445 | |
| ctc gac gag atc cgc | acc atc ctc gcc ggc | gca acc gac cac ctc | 35411 |
| Leu Asp Glu Ile Arg | Thr Ile Leu Ala Gly | Ala Thr Asp His Leu | |
| 5450 | 5455 | 5460 | |
| ccc ccg ccc gta ccg | ttc cgc gac ttc gtg | gcg cag gcc cgc ctc | 35456 |
| Pro Pro Pro Val Pro | Phe Arg Asp Phe Val | Ala Gln Ala Arg Leu | |
| 5465 | 5470 | 5475 | |
| ggc gtc tcc cgc gcg | gag cag gag cgc tac | ttc gcc ggc ctg ctc | 35501 |
| Gly Val Ser Arg Ala | Glu Gln Glu Arg Tyr | Phe Ala Gly Leu Leu | |
| 5480 | 5485 | 5490 | |
| ggc gac gtc acc gag | acc acc gcc ccg tac | ggc ctg gcc gac gtg | 35546 |
| Gly Asp Val Thr Glu | Thr Thr Ala Pro Tyr | Gly Leu Ala Asp Val | |
| 5495 | 5500 | 5505 | |
| acg aac gac ggc acc | gca tcg gtg ccg gcc | gag gtc gag ctc gac | 35591 |
| Thr Asn Asp Gly Thr | Ala Ser Val Arg Ala | Glu Val Glu Leu Asp | |
| 5510 | 5515 | 5520 | |
| gcg gcc ctg gcg gcc | cgg ctg cgc gac ctc | gcc cgc gac ccg gcc | 35636 |
| Ala Ala Leu Ala Ala | Arg Leu Arg Asp Leu | Ala Arg Asp Arg Gly | |
| 5525 | 5530 | 5535 | |
| gtc agc ccg gcg acg | gtc ttc cat ctg gcc | tgg gcg cgc gtg ctg | 35681 |
| Val Ser Pro Ala Thr | Val Phe His Leu Ala | Trp Ala Arg Val Leu | |
| 5540 | 5545 | 5550 | |
| gcg gcg gtg gcc gac | cgg gag gac gtc gtc | ttc ggc acc gtc ctg | 35726 |
| Ala Ala Val Ala Asp | Arg Glu Asp Val Val | Phe Gly Thr Val Leu | |
| 5555 | 5560 | 5565 | |

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| | | | |
|---------------------|---------------------|---------------------|-------|
| ttc gga cgg atg gcc | tcc ggc gcc cgg cgg | gtg ccc ggc ctc ttc | 35771 |
| Phe Gly Arg Met Ala | Ser Gly Ala Arg Arg | Val Pro Gly Leu Phe | |
| 5570 | 5575 | 5580 | |
| atg aac acc ctg ccg | gtt cgc gta cgc ctg | tcc gga acc gcc gcc | 35816 |
| Met Asn Thr Leu Pro | Val Arg Val Arg Leu | Ser Gly Thr Ala Ala | |
| 5585 | 5590 | 5595 | |
| gag gct ctg gga cag | gtg cgc gac cgg ctc | gcc gag ctg atg gcg | 35861 |
| Glu Ala Leu Gly Gln | Val Arg Asp Arg Leu | Ala Glu Leu Met Ala | |
| 5600 | 5605 | 5610 | |
| cac gag cac gcg ccg | ctc gcg ctg gcc cag | cag gcg agc ggc ctg | 35906 |
| His Glu His Ala Pro | Leu Ala Leu Ala Gln | Gln Ala Ser Gly Leu | |
| 5615 | 5620 | 5625 | |
| ccc gcc ggg agc ccg | ctg ttc acg tgc ttg | ttc aac tac cgc tat | 35951 |
| Pro Ala Gly Ser Pro | Leu Phe Thr Ser Leu | Phe Asn Tyr Arg Tyr | |
| 5630 | 5635 | 5640 | |
| gcc cgg ccg ccg gcc | gcc acg ccg gac gat | ccg ctg gcg ggg gtg | 35996 |
| Ala Arg Pro Pro Ala | Ala Thr Pro Asp Asp | Pro Leu Ala Gly Val | |
| 5645 | 5650 | 5655 | |
| cgc acg ctg ttc gcg | tgg gaa cgc aac aac | tac ccg gtc acc gtg | 36041 |
| Arg Thr Leu Phe Ala | Trp Glu Arg Asn Asn | Tyr Pro Val Thr Val | |
| 5660 | 5665 | 5670 | |
| tgc atc gac gac gac | ggc acc gga ttc gcg | gtc acg gtc gac gtc | 36086 |
| Ser Ile Asp Asp Asp | Gly Thr Gly Phe Ala | Val Thr Val Asp Val | |
| 5675 | 5680 | 5685 | |
| gtg gcg ccg gcc gac | gcc gac gag gtc gtc | cgc ctg ctc cgc acg | 36131 |
| Val Ala Pro Ala Asp | Ala Asp Glu Val Val | Arg Leu Leu Arg Thr | |
| 5690 | 5695 | 5700 | |
| acc ctg acc cgc ctg | gcc gcc gcc ctc gaa | cgc act ccc gag atg | 36176 |
| Thr Leu Thr Arg Leu | Ala Ala Ala Leu Glu | Arg Thr Pro Glu Met | |
| 5705 | 5710 | 5715 | |
| ccg gtg gcc gac gtg | cgg ccc ggc cgc gtg | tcc cgg ccc gcc gcc | 36221 |
| Pro Val Ala Asp Val | Arg Pro Gly Arg Val | Ser Arg Pro Ala Ala | |
| 5720 | 5725 | 5730 | |
| ggc cgc gcg gtg ctc | gtg ccg gtc ccg gcc | ggc gag cgg gcg acc | 36266 |
| Gly Arg Ala Val Leu | Val Pro Val Pro Ala | Gly Glu Arg Ala Thr | |
| 5735 | 5740 | 5745 | |
| ggc gcg ggc cgg gct | ccg gcc acg gcg tac | gag gag ctg atc tgc | 36311 |
| Gly Ala Gly Arg Ala | Pro Ala Thr Ala Tyr | Glu Glu Leu Ile Cys | |
| 5750 | 5755 | 5760 | |
| cag gcg tac gcc cag | gtg ctg gag gtt gac | cgg gtg gcg gcc gac | 36356 |
| Gln Ala Tyr Ala Gln | Val Leu Glu Val Asp | Arg Val Ala Ala Asp | |
| 5765 | 5770 | 5775 | |
| gac gac ttc ttc gcc | ctg ggc ggc aac tgc | ctg ctc gcc acg cgg | 36401 |
| Asp Asp Phe Phe Ala | Leu Gly Gly Asn Ser | Leu Leu Ala Thr Arg | |
| 5780 | 5785 | 5790 | |
| ctg gtc agc cgg atc | cgc tgc gcg ctg ggc | gtg gag gtc acc atc | 36446 |
| Leu Val Ser Arg Ile | Arg Ser Ala Leu Gly | Val Glu Val Thr Ile | |
| 5795 | 5800 | 5805 | |

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-------|
| cg | gc | ct | tt | gag | ac | ct | ac | cc | caa | cg | ct | gc | gc | cg | 36491 |
| Arg | Ala | Leu | Phe | Glu | Thr | Leu | Thr | Pro | Gln | Arg | Leu | Ala | Ala | Arg | |
| | | | | 5810 | | | | | 5815 | | | | | 5820 | |
| ct | ac | cg | gc | tc | gca | cc | gg | cg | gt | gca | cc | gc | cc | ag | 36536 |
| Leu | Thr | Arg | Ala | Ser | Ala | Pro | Gly | Arg | Val | Ala | Pro | Ala | Pro | Arg | |
| | | | | 5825 | | | | | 5830 | | | | | 5835 | |
| aca | cg | cc | gag | cg | att | cc | ct | tc | tt | gc | caa | cg | cg | ct | 36581 |
| Thr | Arg | Pro | Glu | Arg | Ile | Pro | Leu | Ser | Phe | Ala | Gln | Arg | Arg | Leu | |
| | | | | 5840 | | | | | 5845 | | | | | 5850 | |
| tgg | tt | ct | gg | gag | ct | gag | gg | ag | ag | gc | ac | ta | ag | aa | 36626 |
| Trp | Phe | Leu | Gly | Glu | Leu | Glu | Gly | Ser | Ser | Ala | Thr | Tyr | Ser | Asn | |
| | | | | 5855 | | | | | 5860 | | | | | 5865 | |
| ac | ac | gc | ct | cg | ct | tc | gg | gag | ct | gac | cc | gc | gc | ct | 36671 |
| Thr | Thr | Ala | Leu | Arg | Leu | Ser | Gly | Glu | Leu | Asp | Pro | Ala | Ala | Leu | |
| | | | | 5870 | | | | | 5875 | | | | | 5880 | |
| ac | gc | gc | ct | ca | gac | gt | at | gg | cg | ca | gag | gt | ct | cg | 36716 |
| Thr | Ala | Ala | Leu | His | Asp | Val | Ile | Gly | Arg | His | Glu | Val | Leu | Arg | |
| | | | | 5885 | | | | | 5890 | | | | | 5895 | |
| ac | gt | at | cc | gc | gag | gac | gg | cg | cc | ta | ca | ct | gt | ct | 36761 |
| Thr | Val | Ile | Pro | Ala | Glu | Asp | Gly | Arg | Pro | Tyr | Gln | Leu | Val | Leu | |
| | | | | 5900 | | | | | 5905 | | | | | 5910 | |
| cc | cc | gag | gag | gca | cg | cc | gc | gt | gag | at | gt | gag | gt | gt | 36806 |
| Pro | Pro | Glu | Glu | Ala | Arg | Pro | Ala | Val | Glu | Ile | Val | Glu | Val | Ala | |
| | | | | 5915 | | | | | 5920 | | | | | 5925 | |
| ccc | gg | gag | ctt | gg | gc | gc | gt | gac | gag | gt | gc | gg | ta | gc | 36851 |
| Pro | Gly | Glu | Leu | Gly | Ala | Ala | Val | Asp | Glu | Val | Ala | Gly | Tyr | Ala | |
| | | | | 5930 | | | | | 5935 | | | | | 5940 | |
| tt | gac | ct | gc | gc | gag | ata | cc | gt | cg | gc | cg | ct | at | cg | 36896 |
| Phe | Asp | Leu | Ala | Ala | Glu | Ile | Pro | Val | Arg | Ala | Arg | Leu | Ile | Arg | |
| | | | | 5945 | | | | | 5950 | | | | | 5955 | |
| ct | gg | gc | ac | gac | ca | gt | ct | gt | ct | gt | at | ca | ca | at | 36941 |
| Leu | Gly | Ala | Thr | Asp | His | Val | Leu | Val | Leu | Val | Ile | His | His | Ile | |
| | | | | 5960 | | | | | 5965 | | | | | 5970 | |
| gc | ac | gac | gga | tgg | tc | at | gc | cc | ct | gc | cg | gac | ct | gc | 36986 |
| Ala | Thr | Asp | Gly | Trp | Ser | Met | Ala | Pro | Leu | Ala | Arg | Asp | Leu | Ala | |
| | | | | 5975 | | | | | 5980 | | | | | 5985 | |
| gc | gc | ta | gag | gc | cg | ct | gc | gg | cg | gca | cc | cg | tg | gag | 37031 |
| Ala | Ala | Tyr | Glu | Ala | Arg | Leu | Ala | Gly | Arg | Ala | Pro | Arg | Trp | Glu | |
| | | | | 5990 | | | | | 5995 | | | | | 6000 | |
| cc | ct | cc | ct | cag | ta | gc | gac | ta | gc | ct | tg | cag | gag | gag | 37076 |
| Pro | Leu | Pro | Leu | Gln | Tyr | Ala | Asp | Tyr | Ala | Leu | Trp | Gln | Glu | Glu | |
| | | | | 6005 | | | | | 6010 | | | | | 6015 | |
| tt | ct | gg | gc | gc | gg | gac | cc | gag | ag | ct | cg | gag | cg | cag | 37121 |
| Leu | Leu | Gly | Ala | Ala | Gly | Asp | Pro | Glu | Ser | Leu | Arg | Glu | Arg | Gln | |
| | | | | 6020 | | | | | 6025 | | | | | 6030 | |
| ct | gc | ta | tgg | cg | gac | ac | ct | gc | gg | at | cc | cc | gag | at | 37166 |
| Leu | Ala | Tyr | Trp | Arg | Asp | Thr | Leu | Ala | Gly | Met | Pro | Pro | Glu | Ile | |
| | | | | 6035 | | | | | 6040 | | | | | 6045 | |

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|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-------|
| ccg | ctt | ccg | gcc | gac | cg | tcc | cgc | ccg | ccg | gtg | gcc | tcg | cac | cgc | 37211 |
| Pro | Leu | Pro | Ala | Asp | Arg | Ser | Arg | Pro | Pro | Val | Ala | Ser | His | Arg | |
| | | | | 6050 | | | | | 6055 | | | | | 6060 | |
| ggc | ggc | gag | gtg | ccg | atc | gcc | ata | ccc | gcc | gac | ctg | cac | cgc | cgc | 37256 |
| Gly | Gly | Glu | Val | Pro | Ile | Ala | Ile | Pro | Ala | Asp | Leu | His | Arg | Arg | |
| | | | | 6065 | | | | | 6070 | | | | | 6075 | |
| ctg | gcc | gag | ctg | gcc | gtc | gcc | gag | cgg | gcc | acc | ctc | ttc | atg | gtt | 37301 |
| Leu | Ala | Glu | Leu | Ala | Val | Ala | Glu | Arg | Ala | Thr | Leu | Phe | Met | Val | |
| | | | | 6080 | | | | | 6085 | | | | | 6090 | |
| ctg | cag | gcc | ggc | ttc | ggc | ggc | ctg | ctg | agc | cgg | ctg | ggt | gcc | ggc | 37346 |
| Leu | Gln | Ala | Gly | Phe | Ala | Ala | Leu | Leu | Ser | Arg | Leu | Gly | Ala | Gly | |
| | | | | 6095 | | | | | 6100 | | | | | 6105 | |
| acc | gac | gtc | ccg | atc | ggc | acc | gcc | ctc | gcc | ggc | cgc | acc | gac | gac | 37391 |
| Thr | Asp | Val | Pro | Ile | Gly | Thr | Ala | Leu | Ala | Gly | Arg | Thr | Asp | Asp | |
| | | | | 6110 | | | | | 6115 | | | | | 6120 | |
| gcc | ctc | gac | gag | ctg | gtc | ggc | ttc | ttc | gtc | aac | atg | ctt | gtg | ctg | 37436 |
| Ala | Leu | Asp | Glu | Leu | Val | Gly | Phe | Phe | Val | Asn | Met | Leu | Val | Leu | |
| | | | | 6125 | | | | | 6130 | | | | | 6135 | |
| cgc | acc | gac | gtg | tcc | ggc | gac | ccc | ggg | ttc | ggc | acg | ctg | ctg | cgc | 37481 |
| Arg | Thr | Asp | Val | Ser | Gly | Asp | Pro | Gly | Phe | Gly | Thr | Leu | Leu | Arg | |
| | | | | 6140 | | | | | 6145 | | | | | 6150 | |
| cgg | gtg | cgc | gag | acc | ggc | ctc | gcc | gcg | tac | gcc | cat | cag | gac | gtt | 37526 |
| Arg | Val | Arg | Glu | Thr | Gly | Leu | Ala | Ala | Tyr | Ala | His | Gln | Asp | Val | |
| | | | | 6155 | | | | | 6160 | | | | | 6165 | |
| ccc | ttc | gac | cag | gtc | gtc | gag | gag | ctg | gtg | acc | gag | cgt | tcc | ctg | 37571 |
| Pro | Phe | Asp | Gln | Val | Val | Glu | Glu | Leu | Val | Thr | Glu | Arg | Ser | Leu | |
| | | | | 6170 | | | | | 6175 | | | | | 6180 | |
| gcc | cgg | cat | ccg | ctg | ttc | cag | gtg | ggc | ctg | acc | gtg | cag | aac | gcg | 37616 |
| Ala | Arg | His | Pro | Leu | Phe | Gln | Val | Ala | Leu | Thr | Val | Gln | Asn | Ala | |
| | | | | 6185 | | | | | 6190 | | | | | 6195 | |
| ccg | ggc | gcg | cgg | ccg | cgg | ctg | gcc | ggc | ctc | gaa | gtc | ggc | acc | gag | 37661 |
| Pro | Gly | Ala | Arg | Pro | Arg | Leu | Ala | Gly | Leu | Glu | Val | Gly | Thr | Glu | |
| | | | | 6200 | | | | | 6205 | | | | | 6210 | |
| ccg | atc | gag | cac | ggc | atc | gcc | cgc | tac | gac | ctc | acg | ctc | acc | gtg | 37706 |
| Pro | Ile | Glu | His | Gly | Ile | Ala | Arg | Tyr | Asp | Leu | Thr | Leu | Thr | Val | |
| | | | | 6215 | | | | | 6220 | | | | | 6225 | |
| acc | gag | cgg | cgc | gac | gag | cac | ggc | gcg | ccg | gac | ggc | ctg | gag | ggg | 37751 |
| Thr | Glu | Arg | Arg | Asp | Glu | His | Gly | Ala | Pro | Asp | Gly | Leu | Glu | Gly | |
| | | | | 6230 | | | | | 6235 | | | | | 6240 | |
| cat | ctc | gag | ttc | agc | cgc | gac | ctg | ttc | gac | gcg | ccg | acc | gtc | gcg | 37796 |
| His | Leu | Glu | Phe | Ser | Arg | Asp | Leu | Phe | Asp | Ala | Pro | Thr | Val | Ala | |
| | | | | 6245 | | | | | 6250 | | | | | 6255 | |
| acc | ctc | ggc | gac | cgg | ctg | atc | cgg | ctc | ctc | acc | gcc | gcg | gtg | gcc | 37841 |
| Thr | Leu | Gly | Asp | Arg | Leu | Ile | Arg | Leu | Leu | Thr | Ala | Ala | Val | Ala | |
| | | | | 6260 | | | | | 6265 | | | | | 6270 | |
| gac | ccg | gag | ctg | ccg | ctg | agc | cgg | atc | gat | ctg | atg | gcc | ccc | gcg | 37886 |
| Asp | Pro | Glu | Leu | Pro | Leu | Ser | Arg | Ile | Asp | Leu | Met | Ala | Pro | Ala | |
| | | | | 6275 | | | | | 6280 | | | | | 6285 | |

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|--|-------|
| gag cgc cgc aac gtg ctc gag ggc tgg agc acc gcc cgg cgc gac Glu Arg Arg Asn Val Leu Glu Gly Trp Ser Thr Ala Arg Arg Asp | 37931 |
| 6290 6295 6300 | |
| gtg ccg gcg gcc acc gtg ccg gag ctg gtg gcc gcg cag gtg gcc Val Pro Ala Ala Thr Val Pro Glu Leu Val Ala Ala Gln Val Ala | 37976 |
| 6305 6310 6315 | |
| cgg cgc ccg ggt gcg gtc gcg ctg cgg tcg gag gac ggc gag atc Arg Arg Pro Gly Ala Val Ala Leu Arg Ser Glu Asp Gly Glu Ile | 38021 |
| 6320 6325 6330 | |
| acg tac gcc gag ctg gac gcg cgc gcc ggg cgg ctg gcc gcg gtg Thr Tyr Ala Glu Leu Asp Ala Arg Ala Gly Arg Leu Ala Ala Val | 38066 |
| 6335 6340 6345 | |
| ctg cgc cgc cgc ggg atc ggg ccg gag tcg cgg gtg gcc gtg ctg Leu Arg Arg Arg Gly Ile Gly Pro Glu Ser Arg Val Ala Val Leu | 38111 |
| 6350 6355 6360 | |
| ttg ccg cgc ggc gtc gag cag gtg gtc gcc ttc ctc gcc gtg gtg Leu Pro Arg Gly Val Glu Gln Val Val Ala Phe Leu Ala Val Val | 38156 |
| 6365 6370 6375 | |
| cgg gcc ggc ggc acc tat ctg ccg atc gat ccc gcg tac ccg cgc Arg Ala Gly Gly Thr Tyr Leu Pro Ile Asp Pro Ala Tyr Pro Arg | 38201 |
| 6380 6385 6390 | |
| gac cgc gtc gac tac ctc gtc ccg gac gcg gag ccg gcg tgc ctg Asp Arg Val Asp Tyr Leu Val Arg Asp Ala Glu Pro Ala Cys Leu | 38246 |
| 6395 6400 6405 | |
| ctg acc gtc gcc ggg cat cgc gcg gcg gcg ccg gcg gca ccg gcg Leu Thr Val Ala Gly His Arg Ala Ala Ala Pro Ala Ala Pro Ala | 38291 |
| 6410 6415 6420 | |
| gtg gtc gag ctg gac gac ccg gcg acc gcg gcc gag atc gcc gat Val Val Glu Leu Asp Asp Pro Ala Thr Ala Ala Glu Ile Ala Asp | 38336 |
| 6425 6430 6435 | |
| gcc gaa ccg gag ccg ccg gtc gcg gtg ccg ccc acc cac tcc gcc Ala Glu Pro Glu Pro Pro Val Ala Val Arg Pro Thr His Ser Ala | 38381 |
| 6440 6445 6450 | |
| tac ctg atc tac acc tcg ggc tcg acc ggg cgg ccc aag ggc gtc Tyr Leu Ile Tyr Thr Ser Gly Ser Thr Gly Arg Pro Lys Gly Val | 38426 |
| 6455 6460 6465 | |
| gtg gtc acc cac cgg ggt gtg gcc gcg ctc gtg gcc acc cag gcc Val Val Thr His Arg Gly Val Ala Ala Leu Val Ala Thr Gln Ala | 38471 |
| 6470 6475 6480 | |
| gag cgg ctc gcg gtg acc ggc gag agc cgc gtc ctg cag ttc gcc Glu Arg Leu Ala Val Thr Gly Glu Ser Arg Val Leu Gln Phe Ala | 38516 |
| 6485 6490 6495 | |
| agc gtg ggc ttc gac gcc tcg atc tgg gag atg gtg atg gcc ctg Ser Val Gly Phe Asp Ala Ser Ile Trp Glu Met Val Met Ala Leu | 38561 |
| 6500 6505 6510 | |
| tgc gcc ggc gcc acc ctg gtc gtc gcc ccg gcc gac gac ctg ctg Cys Ala Gly Ala Thr Leu Val Val Ala Pro Ala Asp Asp Leu Leu | 38606 |
| 6515 6520 6525 | |

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|--|--|--|-------|
| ccc ggc ccg gcc ctg Pro Gly Pro Ala Leu 6530 | gcc gcc acg ctg tcc Ala Ala Thr Leu Ser 6535 | ggg cac gcg gtg acc Gly His Ala Val Thr 6540 | 38651 |
| cac gcg acc ctg ccg His Ala Thr Leu Pro 6545 | ccg gcc gtg ctc gcc Pro Ala Val Leu Ala 6550 | gcg tcc gcg ccc ggc Ala Ser Ala Pro Gly 6555 | 38696 |
| gat ctc gcg ccg ctc Asp Leu Ala Pro Leu 6560 | gcc gtg ctg gtc tcc Ala Val Leu Val Ser 6565 | gcc ggt gag gcg ctc Ala Gly Glu Ala Leu 6570 | 38741 |
| ggg ccg gac ctc gtc Gly Pro Asp Leu Val 6575 | cgg cag ttc gcg ccc Arg Gln Phe Ala Pro 6580 | ggc cgc gcg ctg gtg Gly Arg Ala Leu Val 6585 | 38786 |
| aac gcg tac ggg ccg Asn Ala Tyr Gly Pro 6590 | acc gag acc acg gtg Thr Glu Thr Thr Val 6595 | tgc gcc acg gcg tcc Cys Ala Thr Ala Ser 6600 | 38831 |
| gcc ccg ctc ggc ccg Ala Pro Leu Gly Pro 6605 | gag gat ccc ccg cac Glu Asp Pro Pro His 6610 | atc ggc gcc ccg gtc Ile Gly Ala Pro Val 6615 | 38876 |
| gcc gat tcc ccg gtc Ala Asp Ser Arg Val 6620 | tac gtg ctc gac gac Tyr Val Leu Asp Asp 6625 | gcg ctc acc ccg gtg Ala Leu Thr Pro Val 6630 | 38921 |
| ccg ccc ggg gtc acc Pro Pro Gly Val Thr 6635 | ggc gag ctg tac gtc Gly Glu Leu Tyr Val 6640 | tcc ggg gcg tcc ctg Ser Gly Ala Ser Leu 6645 | 38966 |
| gcc cgc gga tat gcc Ala Arg Gly Tyr Ala 6650 | ggt cgc gcg gcc ctc Gly Arg Ala Ala Leu 6655 | acc gcg gaa cgc ttc Thr Ala Glu Arg Phe 6660 | 39011 |
| gtg gcc tgc ccg ttc Val Ala Cys Pro Phe 6665 | gcg ccg ggt gag ccg Ala Pro Gly Glu Arg 6670 | atg tac ccg acc ggg Met Tyr Arg Thr Gly 6675 | 39056 |
| gac ccg gcc cgc tgg Asp Arg Ala Arg Trp 6680 | gac gcg gcc ggc ccg Asp Ala Ala Gly Arg 6685 | ctc acg ttc gcc ggg Leu Thr Phe Ala Gly 6690 | 39101 |
| cgc gcc gac gac cag Arg Ala Asp Asp Gln 6695 | gtc aag atc cgc ggg Val Lys Ile Arg Gly 6700 | ttc ccg gtg gaa ccg Phe Arg Val Glu Pro 6705 | 39146 |
| ggt gag gtg gcc gcg Gly Glu Val Ala Ala 6710 | gtg ctc ggc gaa cac Val Leu Gly Glu His 6715 | ccg gcg gtc gcc ccg Pro Ala Val Ala Arg 6720 | 39191 |
| gcg gcg gtc gtg gcg Ala Ala Val Val Ala 6725 | cgc acg gac ggg ccg Arg Thr Asp Gly Pro 6730 | cag ggc gcg ccg ctg Gln Gly Ala Arg Leu 6735 | 39236 |
| gtg gcg tac ctc gtc Val Ala Tyr Leu Val 6740 | gcc gcc gac ccg gcc Ala Ala Asp Pro Ala 6745 | ggg ccc gac ctg gcc Gly Pro Asp Leu Ala 6750 | 39281 |
| gct gcg gtg cgc gcg Ala Ala Val Arg Ala 6755 | tac gcc gcc gcg acc Tyr Ala Ala Ala Thr 6760 | ctg ccc gcg cac ctg Leu Pro Ala His Leu 6765 | 39326 |

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|-----------------------|-----------------------|-----------------------|-------|
| ctt ccg gcc gcg ttc | gtg ccg ctc gac cgc | ctg ccc ctg acc acg | 39371 |
| Leu Pro Ala Ala Phe | Val Pro Leu Asp Arg | Leu Pro Leu Thr Thr | |
| 6770 | 6775 | 6780 | |
| aac ggc aag ctg gac | cgg gcc gcg ctg ccc | gaa ccg gag acc ggc | 39416 |
| Asn Gly Lys Leu Asp | Arg Ala Ala Leu Pro | Glu Pro Glu Thr Gly | |
| 6785 | 6790 | 6795 | |
| gcc ggg cgc gag ccg | tcc ggc ccc gtc gaa | cgg ctg ctc tgc gag | 39461 |
| Ala Gly Arg Glu Pro | Ser Gly Pro Val Glu | Arg Leu Leu Cys Glu | |
| 6800 | 6805 | 6810 | |
| gcg ttc gcc gac gtg | ctc ggc ctc gac cgg | gtc ggc gcc gac ggc | 39506 |
| Ala Phe Ala Asp Val | Leu Gly Leu Asp Arg | Val Gly Ala Asp Gly | |
| 6815 | 6820 | 6825 | |
| cac ttc ttc gac ctg | ggc ggc cat tcc ctg | ctc gcc acc cgg ctg | 39551 |
| His Phe Phe Asp Leu | Gly Gly His Ser Leu | Leu Ala Thr Arg Leu | |
| 6830 | 6835 | 6840 | |
| ctc agc cgg ctc cgc | tcc gcc gcg ggc atc | gac gtc ccg gtc cgg | 39596 |
| Leu Ser Arg Leu Arg | Ser Ala Ala Gly Ile | Asp Val Pro Val Arg | |
| 6845 | 6850 | 6855 | |
| gtg ctt ttc gag aac | ccc act ccc gcc ggg | ctc gcc gcc tgg gtg | 39641 |
| Val Leu Phe Glu Asn | Pro Thr Pro Ala Gly | Leu Ala Ala Trp Val | |
| 6860 | 6865 | 6870 | |
| gag acc cac gcc gga | tcc cgc cgg aag tcc | cgg ccg gcg ctg cgg | 39686 |
| Glu Thr His Ala Gly | Ser Arg Arg Lys Ser | Arg Pro Ala Leu Arg | |
| 6875 | 6880 | 6885 | |
| ccg atg cgt cac cag | aag gag tcc tga | tgateccccct gtcgttcg | 39733 |
| Pro Met Arg His Gln | Lys Glu Ser | | |
| 6890 | | | |
| cagcgcgcgc tgtggttcc | cggcgcgcgc gaggggcct | ccgccaccta caacatccc | 39793 |
| ctcgtgctgg gctgaccgg | cacgtcgac gccgcgcgc | tcgaaaccgc cctgcgcgac | 39853 |
| gtgctggagc ggcacgaggt | gctgcgtacc gtctatccg | acgcgcgcgc cgagccgcac | 39913 |
| cagcggatcc tgcgcctcg | cgagaccggc ttcggcctgc | gggtcgccga ggtgacggac | 39973 |
| ggcgagctgg accgcgcct | cgcgacgcc accgggcacg | ccttcgacct cgcgaccgag | 40033 |
| atcccggtcc gggcctcgt | gtccaccgtc gagccgggc | ggcacgtcct ggcgctggtg | 40093 |
| ctgcaccaca tcgcggccga | cggtcggctg atggggcgc | tgtgcgcga cctgtccacc | 40153 |
| gcgtacacgg cccggctggc | cggcggggaa cgggcctggt | cgccgctgcc ggtccagtac | 40213 |
| gcggactacg cgctgtggca | gcaggaggtg ctcggcgccg | gtgacgacct ggagagcctc | 40273 |
| ctgcgcgagc aggtcggcta | ttggcggtcg gcctcgccg | gagccccga ggagctgcgc | 40333 |
| ctgcgcgcgc accaccggc | ccgcgcctg tcgtcgtccc | gggcgcacat ggccgagttc | 40393 |
| gccgtgcgcg ccgcgcacca | cggcgacctg accgcctca | ccgcgagct cggcgccacg | 40453 |
| ctcttcatgg ccgtgcacgc | ggcgaccgcc atggtgcttt | ccgggctggg cgcgggcgac | 40513 |
| gacctgcga tcggcacggt | ggtggccgc cgcaccgacg | ccggcctcga cgacctcgtc | 40573 |

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|-------------|------------|------------|------------|-------------|-------------|-------|
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| ctgcggctgc | cgggcctcgg | catcgaggtg | ctgcccgggc | agccctccgc | tcgcgacctc | 40873 |
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| gcgaagatcc | gcggtttcgg | ggtcgagccg | ggcgagggtg | aggccgtgct | ggccgcgggt | 42433 |
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APPENDIX A

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| gtcgagcggg | tgggtgtgga | ggacgatttc | ttcgcgctgg | gtggtcattc | gctgctggtg | 42793 |
| gtctcgctgg | tggagcggct | gcgccggcag | gggatctcgg | tgccggtgcg | ggcgttggtc | 42853 |
| accacgcgca | ccccggccgg | gctggccgag | gcggtcggtg | atggtgccgt | ggtggtgccg | 42913 |
| ccgaacctga | ttcccagggg | tggggcggag | ctgaccccg | agatgctgcc | gctggccgat | 42973 |
| ctgaccgccg | acgaacttgc | tgttgtcgtg | gattcgggtg | ctggtggtgc | ggcgaacatc | 43033 |
| gcggatgtgt | atccgttggc | gcggttcgag | gagggcattt | tcttccatca | catgatggcc | 43093 |
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| ctggacggcc | cgtcggccg | gcgcgtggcc | gccttcgccc | gggaacacgg | cgtcagcccg | 43753 |
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| gcggtcggcg | tgtggggcga | ggacgagctg | agccgggtcg | tctccggctg | gaacgacacc | 44353 |
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| gtcgctgccc | tcgagcgctc | cgcggaacgtg | ctgaccgctg | tcctcgccgt | cgcaaggcc | 44593 |
| ggcggtgtct | tcgtcccggt | ggacctctcc | tgccccggg | cccgctcga | cgcggtgatc | 44653 |
| gccgactgcg | cgccctggat | cgcggtggcc | gaccggcgga | tgaccggcct | gaccgtcggtg | 44713 |
| cccgccaaacc | gggcccggga | tcggcggtc | gcgctgcgc | cccggccct | gccgggcgcg | 44773 |
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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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| gaccaggtca | agatccgcgg | cttcggtatc | gagccggggc | aggtgcaggc | cgctcggtgg | 61453 |
| cgccaggccg | gcgtggcccg | ggcggtgggt | ctggcccgga | gcgactcgcc | cggcgacgcc | 61513 |
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| gccgcgcca | ccacggtcgc | cgttccgccc | aacctcatcc | ccgaggacgc | gcggcacatc | 61993 |
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| ggcatgctct | tccaccacct | catggccggc | gacgacggcg | aggacgtcta | catcatgccc | 62173 |
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| gtgatcgacc | gcaacgacgt | ctaccgcacc | ggcgtgggtct | gggacggcct | gcgcgagccg | 62293 |
| gtgcaggtgg | tctggcgccg | ggcgcccccctg | cccgtgaccg | aggtgacgct | cgatccggcc | 62353 |
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| gcgcccctgc | tcgacctcca | cgtggccgcc | cggcccagg | acggccaacg | gctggcccctg | 62473 |
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| ctcggcgatga | tctccggccg | cgacgacgtg | gtcttcggca | cgctgctgct | gggcccgttc | 62893 |
| agcaccggcg | ccgaccgggt | gcccggcccc | ttcatcaaca | cgcttcgggt | gcgggccccg | 62953 |
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| ctcccgtgt | tcacggcgct | gttcaactat | cggcacaaca | cgctcgccggg | tcgggacccg | 63133 |
| tcgcccgcgg | ccggcccgc | cgagggcatc | cgcccgggtct | ccatgcggga | gcgcaccaac | 63193 |
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| atcccgcggg | tcgggcccga | ggcgggtgtg | gagctcgtgg | cgaccgcgac | cgagagcctg | 63313 |
| acctcggcgc | tggagctggt | cctcgacggc | ggtccggaca | ccgcggtcgg | cgagctcgac | 63373 |
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| gtggtggagt | cgtcgggtgcc | ggcgttggtc | gccgagcggg | tggcggccgc | gccggatgcg | 63493 |
| gtcgcgggtg | tgggcgaggg | tgtgtcgtgg | tcctatcgcg | agcttgaccg | tcgctcggat | 63553 |
| gtgctggcgc | ggagtctggt | ggcggcgggt | gtgggcctgg | agtcgccggg | ggtggtggcc | 63613 |

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| | | | | | | |
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| cggccggttc | tgggtgttga | cagcgtggat | ctgccggccg | cggaggccga | cctgccgcgg | 63793 |
| gtgccggccg | gtgcgggctg | gtatcggatg | tacacctcgg | gttccacggg | cgggccaag | 63853 |
| ggtgtggtga | ccaccacca | gaatctggtg | gatctggcga | cgcacacgtg | ttggggatcg | 63913 |
| acgccgcggg | tgttggtcca | cgcgccgcac | gccttcgacg | cgtcgtcgta | cgaaatctgg | 63973 |
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| ttgcgggtgc | tggaccgcgc | gtgcttcgcg | gggctgaccg | aggttttgac | cggcggggat | 64153 |
| gccgtgtcgg | cggaggcggg | gcgcggggtc | aaggaaagca | accggggtct | gcgggtgcgc | 64213 |
| cagttgtacg | gccccagcca | ggtgaccttg | tgcgccacgc | agcatctgct | ggatgacggg | 64273 |
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| tatgcgggca | tgcggggttt | gacggccgag | cgatttgctg | cgcaccggtt | ctcgggtgggt | 64453 |
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| gccgggcccc | ccgatgatca | ggtgaagatc | cgcggctatc | gggtggagcc | gggcgaggtt | 64573 |
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| gcgccagggg | ataagcggct | ggtcgcctat | gtcgtcggcg | gggatgtcga | ggcgtatgcg | 64693 |
| caggagcgcc | ttcccggcta | catggttcgg | tgggccttcg | tccatctgga | agcgtgcgcg | 64753 |
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| gtcacggtgc | aggacatcat | ggccgcgcgc | acggtctcgg | agctgatggg | ctcgtgagc | 65053 |
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| ccgccgctgt | tctgcgtcca | tccggccggc | gggctcagct | ggtgctacct | gccgctggcc | 65173 |
| cggcacgtgc | cggccgaccg | cccgatctac | ggtctgcagg | cgcgcggcgc | cgaaggcccg | 65233 |
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| gagatcgccg | tccagctgcg | cgagcagggc | gccgaggctg | tgctggtgct | catggactcc | 65413 |
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| aacacctggc | ggtgggcgcc | gtacatcacc | ggtgagatca | cccaggtggt | gctccctgc | 65713 |
| gagcacaccg | acctggtacg | ccccgacatg | ctcgcgctgc | tctggccggc | cgtcgaggcg | 65773 |
| tggcaggccg | ggcggcaccg | accttagtca | ccacagcgtc | gagaggaccg | acatgcagaa | 65833 |
| gatcccgctc | gtgtgtgtgc | cgttcgccgg | tgcgggcgcc | tcgctcttcc | acccgtgggc | 65893 |
| cgagctcgcc | gggccggacc | ggccgatcgt | cgcgctccag | cttcggggcc | gggagtggcg | 65953 |
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Val Thr Val Arg Arg Trp

1

5

cta ccg gcc ggg ctc acg gtc ctg gcg ttc gcc gcc ggc ttc tgg cag 70724
 Leu Pro Ala Gly Leu Thr Val Leu Ala Phe Ala Ala Gly Phe Trp Gln
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aag ctg ccc tgc cag gcc gct ggc tgg ccg gac gac acc gcg acg ctg 70772
 Lys Leu Pro Cys Gln Ala Ala Gly Trp Pro Asp Asp Thr Ala Thr Leu
 25 30 35

ttc ggc cgc tac tgc tac agc gac gtg ccg att ctc ttc cgg gag cgc 70820
 Phe Gly Arg Tyr Cys Tyr Ser Asp Val Pro Ile Leu Phe Arg Glu Arg
 40 45 50

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 Gly Leu Phe Asp Gly Ile Phe Pro Tyr Glu Ser Gly Pro Gly Ala Gln
 55 60 65 70

APPENDIX A

| | |
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| Pro Leu Glu Tyr Pro Val Leu Thr Gly Tyr Leu Met Asp Ala Thr Ala | |
| 75 80 85 | |
| cgc ctc gtt cgc gcg atc ctg ccc ggc gcg gac gtg gcc gtc gcc tcc | 70964 |
| Arg Leu Val Arg Ala Ile Leu Pro Gly Ala Asp Val Ala Val Ala Ser | |
| 90 95 100 | |
| cgc gcg tac ttc ctc acg acg gtc ctg gtg ctg ctc gcc ctc gcg gtc | 71012 |
| Arg Ala Tyr Phe Leu Thr Thr Val Leu Val Leu Leu Ala Leu Ala Val | |
| 105 110 115 | |
| ctg acc gtg tgg gcg acc ggt gcg gtg ctg cgc cgc acc ggc ggg cgc | 71060 |
| Leu Thr Val Trp Ala Thr Gly Ala Val Leu Arg Arg Thr Gly Gly Arg | |
| 120 125 130 | |
| cgc ggc gac gcg ctg ctg gtc gcc gcc gca cgc gtg ctg atc ctg gcc | 71108 |
| Pro Gly Asp Ala Leu Leu Val Ala Ala Ala Pro Val Leu Ile Leu Ala | |
| 135 140 145 150 | |
| ggc acg gtg aac tgg gac ctg ctc gcg gtc gcg gcg gcg gtg ctc gcg | 71156 |
| Gly Thr Val Asn Trp Asp Leu Leu Ala Val Ala Ala Ala Val Leu Ala | |
| 155 160 165 | |
| atc ctc gcc tgg gaa cgc gac cgc cgc ctg ctg gcc ggc gtg ctg atc | 71204 |
| Ile Leu Ala Trp Glu Arg Asp Arg Pro Leu Leu Ala Gly Val Leu Ile | |
| 170 175 180 | |
| ggg ctg ggc acg gcg gcc aag ctg ttc cgc ctg gtg ctg ctc ggc cgc | 71252 |
| Gly Leu Gly Thr Ala Ala Lys Leu Phe Pro Leu Val Leu Leu Gly Pro | |
| 185 190 195 | |
| gtg ctg ctg ctc tgc ctc cgc cag cgc cgc atg cgc cgc ttc gcc cgc | 71300 |
| Val Leu Leu Leu Cys Leu Arg Gln Arg Arg Met Arg Arg Phe Ala Arg | |
| 200 205 210 | |
| gtg gcc gcc ggt gcc gcc ggc gcc tgg ctt ctg gtc aac ctg ccg gtg | 71348 |
| Val Ala Ala Gly Ala Ala Gly Ala Trp Leu Leu Val Asn Leu Pro Val | |
| 215 220 225 230 | |
| gtc gcg ctg caa cgc gac ggc tgg atg gag ttc tgg cgc ttc aac gcc | 71396 |
| Val Ala Leu Gln Pro Asp Gly Trp Met Glu Phe Trp Arg Phe Asn Ala | |
| 235 240 245 | |
| ggg cgc ggc gcc gag ttc ggc tgc ctc tgg ttc gcg ctg gac ggc ctc | 71444 |
| Gly Arg Gly Ala Glu Phe Gly Ser Leu Trp Phe Ala Leu Asp Gly Leu | |
| 250 255 260 | |
| ggc ctg cac atg cgc gcg gtg aac gcc gtc gcc ctg gcg acg ttc ggc | 71492 |
| Gly Leu His Met Pro Ala Val Asn Ala Val Ala Leu Ala Thr Phe Gly | |
| 265 270 275 | |
| gtg ctg ctg gcc ggc atc gcg gtg ctg gct ctg cgc tgc cgc cgc ccg | 71540 |
| Val Leu Leu Ala Gly Ile Ala Val Leu Ala Leu Arg Ser Arg Arg Pro | |
| 280 285 290 | |
| cgc gac ctg gcg caa ctc gcc tgc ctg gcc gtc ggc gcg ttc ctg ctg | 71588 |
| Pro Asp Leu Ala Gln Leu Ala Cys Leu Ala Val Gly Ala Phe Leu Leu | |
| 295 300 305 310 | |
| acc aac aag gtc tac tgc cgc cag tac gcg ctc tgg ctc ctg ccg ctc | 71636 |
| Thr Asn Lys Val Tyr Ser Pro Gln Tyr Ala Leu Trp Leu Leu Pro Leu | |
| 315 320 325 | |

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|---|-------|
| gtg gtg atc gcc cgt ggg cgg gtc ccg cgg tgg ccg gtg gtg cgc gac Val Val Ile Ala Arg Gly Arg Val Pro Arg Trp Pro Val Val Arg Asp 330 335 340 | 71684 |
| tgg gcc gtc tgg cag gcc gcc gag gtg ctc tac tgg ctc gcg gtg tgg Trp Ala Val Trp Gln Ala Ala Glu Val Leu Tyr Trp Leu Ala Val Trp 345 350 355 | 71732 |
| agc tgg ctc gcc ggt tgc ctg acc gac gag cgg cag tac gcc tgg gca Ser Trp Leu Ala Gly Ser Leu Thr Asp Glu Arg Gln Tyr Ala Trp Ala 360 365 370 | 71780 |
| acc gtc ctg cgc gtg ctc gcc acg gcg tac gtc tgt ggt cag gtg gtg Thr Val Leu Arg Val Leu Ala Thr Ala Tyr Val Cys Gly Gln Val Val 375 380 385 390 | 71828 |
| tgg gac gtg ctc gcc gcc cct cgc ccg cac cgg ccg gcg ccg ccc ccg Trp Asp Val Leu Ala Ala Pro Arg Pro His Arg Pro Ala Pro Pro Pro 395 400 405 | 71876 |
| gcg gtc gcc gag ccg gcc cac ccg ggc Ala Val Ala Glu Pro Ala His Pro Gly 410 415 | |
| tga cccgggcaac gagagatccc ctgcgcgcg gcggcgaggg gatctctgtt | 71956 |
| cgtgtgctca gtcggcggcg acccactga gcccggtgcc ggaaggggtc agcccgccct | 72016 |
| cgaacagcgg ctgctcctgc gtgccctccg ggcccaggat cgcgcgcggc tggatctgcg | 72076 |
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| gggtgctgcg gttgcccgag gcgtcgacga cgaagcgcgc cagcgcggtg cgggtctgcc | 72976 |
| cgctctgggt gaaacggacg ccgcggaccc gctcgtcgtc ggcgatcgcc tcggtcaccg | 73036 |
| ggtggttctc ccggacgtcg acgccagcc ggccgcggtt ctccagcagg atctggtoga | 73096 |

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| gcatgaaccc | ggccttggcg | atctcgtcgc | cgaccccgag | caggttgacg | acaccgtgca | 73276 |
| cggtggacgg | cagcagcgat | tcgcgcgatct | ggtaccgcgg | gaacttctcc | cgctccagca | 73336 |
| gcagcacctt | ggcgccctgc | ttggcggtca | gcgcgcggcg | cgtggaaccg | cccggcccgc | 73396 |
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| catctgagct | gcatgatggg | tgccgcgggg | cgctgtgcgc | cacgtgtccg | cccacccgcg | 73516 |
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| ccagccgggt | ctcccaggcc | caggccgccca | cgccgacccg | gttgcgtagc | cccaatttgg | 73636 |
| actggatcgt | ggaggcgtgc | cccttcaccg | tgctcagcga | gatgaagaga | tcggccgcga | 73696 |
| tctcctgggt | cgtgcggccg | cgggcgatcg | cccgcgccac | ctcgagctcg | cggtcggaga | 73756 |
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| ggtggccgtg | ccgccagcc | aggtgaggat | gttcagccag | gtcaccggcg | ccgggcccgc | 74956 |
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| cagcgccatg | gccggggccg | gctcggcccg | catgtgcagc | acggccgccc | tgacgacggc | 75136 |
| gcccgcgcg | atcgtgagcc | cgccgcgggc | gcacggcacc | gggcccgcgc | gccggatcag | 75196 |
| ggcgagcagg | cagacgagcg | tcgcggccgc | gccggccgac | aaccagtagg | ccaggcccca | 75256 |
| gctctgcgcg | acggcgacgg | cctcgacgac | gacggcggcc | acgaagagga | cggccagccc | 75316 |
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| gccggcgccg | tcgcggcgcg | cgggaccggt | tcgggcgcgc | atgttcacgc | cggccaagga | 75436 |
| taggggcgaa | tcgggcgcgc | ccaaggggtc | aaaagtaggg | tgacgcccga | aatcaaccct | 75496 |
| tcttagggcg | gtaccgggtc | gcggggcgct | ccccgacgat | gaaggccatg | tctcacgagc | 75556 |
| gctccactcc | cgttctgcag | gccgagggcc | tgacgaaacg | ctacggcccg | cggaggggccc | 75616 |
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| gctcgggcaa | gtccacactg | ctgcagctgt | gctgcgggat | ggtcgcgcgc | agccggggcc | 75736 |
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| gcgcgcggct | caatccgcgc | tgggaccggc | ggctggccga | ccggcgcatc | gcctcggccg | 75916 |
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| ccatctgggt | ggaggacttc | ggctcgtaca | gcgggggagt | ggtgcgggcc | gaggtggacc | 76336 |
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| acatcgcgta | cgggccctgc | cgcagataac | cctgcgcgcc | cagcaccgag | cgcagatcgt | 77116 |
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| ccccgtacag | ccggcgctcc | atcgccatct | cggtggccag | ccgcaccgcg | ctgtccagcg | 77356 |
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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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| gtgccgcggt gccgggccag agtcgcggg ttgaactccc agccgatcag gaacgtgaac | 2609 |
| agggccaggc cgatctgggc caccgcggac aggtacggcc gggcctcggc cgggaagagc | 2669 |
| caggccgtcg ggttgcccg cagcaggccg agcaggctcg ggcgagcgc gatgcccgcg | 2729 |
| aggatctccc cgatcaccgc gggctggcgc agccgccgca cccaccggcc gagcagggca | 2789 |
| ccggccgcga gcaccagcgc gatgtcgagc aggacggctc cgatcaccag ttccgcgtgg | 2849 |
| gttgccggcg actccatcgg cggctcagge gctctgcttg gacatgtcga gctcgaccgc | 2909 |
| ctcgtacagc gccttgatgt tgccgctgcc gaagctgcga gcgccattc gctcgatcac | 2969 |

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| | |
|--|------|
| ctccatgaag atcgteccgc gggggtgcac cgacttcgtg aagatctgga acagctgccc | 3029 |
| gtcgtggtcc tggtegcacga gcacgttcag gtcgcgcagc gcctggatcg ggtgcccggc | 3089 |
| ctgcgggatg cgcgccggta gccggccgta gtacgagtc ggggtgtgca ggaactcgac | 3149 |
| gccgtgctcg gacatccggc cgaccgagcg cagcacgtcg tcggtgatga acgcgaggtg | 3209 |
| ctgcacgccc ggcccgcggt ggttcttcag gaaggtgtcg atctggccct gctcgagcga | 3269 |
| cgtgtcgggc tcgatgaggg tgagcgtcac accgcccag cggtcttgca ccaccttgga | 3329 |
| gtccatcgcc tgccggccca ccaggatgcg ctctcgaag atcatctcga agtcgaggac | 3389 |
| gtcgcggtag aagtcgacgg tcgggtcgag ggtccccggc tcgaggcaga cggcgatgtg | 3449 |
| gtcgatcgcc tgcaggcccg agtcgaaccg ggtggggctg ggcgcgcga gctccaggcc | 3509 |
| gggcagggtc cgggggtccg cgcccggcgc cgcctcgacg aaggtgtgca ggacgtcacc | 3569 |
| gaagccgagg atggtcgaga cggtcacgcc gttgcgggtg accggggcgg ataccccgac | 3629 |
| ggcgcctcgc cgcaccgct cggtgaacgc cgcgtggcg tctctcgtgc tgagcgcgat | 3689 |
| ggccgacaca cgtcgccgt gctgctcgac gtaggccatg gccggatggt ccccgccggg | 3749 |
| cgccgaggtc agcacgagcc ggatgtcgtc gcgtcccagc gccaccgccc gcaccggcgc | 3809 |
| gtgcgcgtcg ccggtcccgc cgtacaccga gaagccgtag cctccgtaa acggggcgt | 3869 |
| ggcgattcg acgtccgga ccgcgaattc gatgtggtcg atgcgcagat cgggtgaagg | 3929 |
| gccgttgtcc actgttctc ccgggttcgt cgtgctacgt cggttgtcag ggcttgtcgc | 3989 |
| atcgcaggac cgtgagatcc ggatcggcgc cgtgctcggc cggcggcacg gtggcgcacg | 4049 |
| tctcgaggac ccagccggtg atgcggtacg cctcggtggc ctcgcgcgcg aggcctccg | 4109 |
| ggcgcgcgag gacgaagtag cgcagctcgc cgtcgcggac caggcgtgc acgccggcca | 4169 |
| gcgacgggaa cggcgcgct ccgctgaagc cgcgcgagcg caggtaggag tgcccggtcg | 4229 |
| ggacgatgag ccggccggcc gtgcgccacg aggacgtggc cgcaggtag gtgcggcgt | 4289 |
| cgcggtgggc cgcgagatag tcgtcgagcc tgcgcaggcc cggcgtcagc cggtcggtgg | 4349 |
| tgctcgtcgc gagccgcacg cccaccggcc cgtcggccc cgcaccggcc tcgaacgacg | 4409 |
| tgccggcgta tcgcggttc agcaccgagg cgcgccacgc gaccggcacc gccagcaggc | 4469 |
| cggcgaccac cacgacgacg gccggccgccc gggccgctcg ccgcgcggcc agcaccacca | 4529 |
| cggccaggac ggcggcgatc ggcgcgctc acgtcagccc ggccaggaa gagggatagc | 4589 |
| gggtggccag ccacagggtc cagccggct ggacgaccac gaccggggc agcagccagg | 4649 |
| gcgcgctgcc gtcgcggtgc gtgcgccaga gctgcaccgc gccggccgccc gcgagcgcg | 4709 |
| ccagcggcgg ggccagcacg gccaggtagg cgttgtgtc aatggtgatc cggctgagca | 4769 |
| ccaccgggc cgtcagcaac cacagtcccc agaacaggag gccggcgcgc gcggtgcgcc | 4829 |
| accgggccag gccgagcagc aggcgggtca gcgccagcgg gtaccaccac ccgatctggg | 4889 |

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tggcgaggcg atccgcggca agcgccgtcc aggaaccgcc ggccgcggcc ccgcgcgtcg 4949
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 ccgcgcgcgac atggacgacc cgggcccgcg cccgcaccgg tgcgcggcg agataggtga 5189
 cgaccagggc cggcagcacc agccacgect gcacatctt cgccctggaag ccgagcccga 5249
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 cgtcggccgc gagcaccagg cagagcgta ggcacgcgtc ctccatggag tggccgaaca 5369
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gacaagctca caggagacgg cgatggtgga gaacgtcatt caggtc

gtg gcg ccg ggc gca ccg ccg gcc gag cac ggc gag 6111
 Val Ala Pro Gly Ala Pro Pro Ala Glu His Gly Glu
 1 5 10

gcc gtg ccg gag gcg gac atc ccg gtc ctg cgg aac cgc atc gac gag 6159
 Ala Val Pro Glu Ala Asp Ile Pro Val Leu Arg Asn Arg Ile Asp Glu
 15 20 25

atc gac gcc gcc atc atg cgg ctg tgg cag gaa agg gcc tcg atc tcg 6207
 Ile Asp Ala Ala Ile Met Arg Leu Trp Gln Glu Arg Ala Ser Ile Ser
 30 35 40

cag aag atc ggc tcc atc cgg ctg gcc tcc ggc gga acc cgg gtg gtg 6255
 Gln Lys Ile Gly Ser Ile Arg Leu Ala Ser Gly Gly Thr Arg Val Val
 45 50 55 60

ctc tcc cgg gag cag gag gtc atc cag cgc ttc cgc gcc gcg ctc ggc 6303
 Leu Ser Arg Glu Gln Glu Val Ile Gln Arg Phe Arg Ala Ala Leu Gly
 65 70 75

gag gat ggc acg acc atc gcg ctc atg ctc ctg cgg gcc ggc cgc ggc 6351
 Glu Asp Gly Thr Thr Ile Ala Leu Met Leu Leu Arg Ala Gly Arg Gly
 80 85 90

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ccg ctc
Pro Leu

tga ccgctgtcca 6370

accgcgccgg cggcgcagtc gcacagcccg tgcacgcttg tcggccgttc cgagtctcgg 6430

ccatagtgtt ggcggtggcg ccaaccgcgg gccgtgcggc tcctgaccac cgtcatccga 6490

tccgttcgat ggaggcgacg ct

gtg ccc aat ccg ttt gaa gat 6533
Val Pro Asn Pro Phe Glu Asp
1 5

ccc gac gcc aac tac ctg gtc ctg gtc aac gac gag gga cag cac tca 6581
Pro Asp Ala Asn Tyr Leu Val Leu Val Asn Asp Glu Gly Gln His Ser
10 15 20

ctc tgg ccg gtc ttc gcc gac gtg ccc gac ggc tgg acg acg gtg ttc 6629
Leu Trp Pro Val Phe Ala Asp Val Pro Asp Gly Trp Thr Thr Val Phe
25 30 35

ggc gag gcc gga cgg cag gac tgc ctc gac tac atc gag aag tcc tgg 6677
Gly Glu Ala Gly Arg Gln Asp Cys Leu Asp Tyr Ile Glu Lys Ser Trp
40 45 50 55

acc gac atg ccg ccc aag agc ctg atc gcg gcg atg gag aag cag aag 6725
Thr Asp Met Arg Pro Lys Ser Leu Ile Ala Ala Met Glu Lys Gln Lys
60 65 70

caa ccg cag agc
Gln Pro Gln Ser
75

tga gcgcgaccgg ccggcggcgt cgcggccctg gcggaccctt ccggagaggg 6790

agttgcc

atg gtc atc gac gcc gcc acc caa ccc acc gtt 6830
Met Val Ile Asp Ala Ala Thr Gln Pro Thr Val
1 5 10

ccc gac gcc ttc cgg gcg cag gcg atc gcg cgc ccc ggc gag ccc gcc 6878
Pro Asp Ala Phe Arg Ala Gln Ala Ile Ala Arg Pro Gly Glu Pro Ala
15 20 25

ctc gtg gtg ctc ccc ggc gac ccg gac gcc gag ccc gtc acc ctc acg 6926
Leu Val Val Leu Pro Gly Asp Pro Asp Ala Glu Pro Val Thr Leu Thr
30 35 40

tac gcc gag ctc gac cgc cgc gcc gcg gcg cgg gcg gcc tgg ctc gcc 6974
Tyr Ala Glu Leu Asp Arg Arg Ala Ala Ala Arg Ala Ala Trp Leu Ala
45 50 55

gcc cgg ttc ccg gcc ggg gag cgc atc ctc atc gcc ctg ccc acc ggc 7022
Ala Arg Phe Pro Ala Gly Glu Arg Ile Leu Ile Ala Leu Pro Thr Gly
60 65 70 75

gcc gag ttc gtc gag ctc tac ctg gcg tgc ctc tac gcc ggc ctg gtc 7070
Ala Glu Phe Val Glu Leu Tyr Leu Ala Cys Leu Tyr Ala Gly Leu Val
80 85 90

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| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| gcc | gtg | ccg | gcg | ccc | ccg | ccc | gga | ggg | tcg | tcc | ggc | gcc | tcc | gag | cgc | 7118 |
| Ala | Val | Pro | Ala | Pro | Pro | Pro | Gly | Gly | Ser | Ser | Gly | Ala | Ser | Glu | Arg | |
| | | 95 | | | | | | 100 | | | | | 105 | | | |
| acc | gtc | ggc | atc | gcg | gcc | gac | tgc | tcc | ccc | gcc | ctg | gcc | gtc | gtc | aac | 7166 |
| Thr | Val | Gly | Ile | Ala | Ala | Asp | Cys | Ser | Pro | Ala | Leu | Ala | Val | Val | Asn | |
| | | 110 | | | | | 115 | | | | | | 120 | | | |
| gcc | gac | gac | gcg | gcg | ccg | ctc | acc | gcc | gtc | ctg | cgc | gag | cgc | ggc | ctg | 7214 |
| Ala | Asp | Asp | Ala | Ala | Pro | Leu | Thr | Ala | Val | Leu | Arg | Glu | Arg | Gly | Leu | |
| | | 125 | | | | 130 | | | | | 135 | | | | | |
| tcc | ggc | ctg | ccg | gtc | ggg | gcg | ctt | ccg | ccc | ctc | gcg | gcg | gaa | gcg | atc | 7262 |
| Ser | Gly | Leu | Pro | Val | Gly | Ala | Leu | Pro | Pro | Leu | Ala | Ala | Glu | Ala | Ile | |
| | | 140 | | | | 145 | | | | 150 | | | | | 155 | |
| cgc | ccg | ccc | cgc | ggg | ccc | cgg | ccg | gac | tcg | ctg | gcc | gtc | ctg | cag | tac | 7310 |
| Arg | Pro | Pro | Arg | Gly | Pro | Arg | Pro | Asp | Ser | Leu | Ala | Val | Leu | Gln | Tyr | |
| | | | | 160 | | | | | 165 | | | | | 170 | | |
| agc | tcg | ggc | tcc | acc | ggc | tcg | ccc | aag | ggc | gtg | atg | ctc | agc | cac | cgg | 7358 |
| Ser | Ser | Gly | Ser | Thr | Gly | Ser | Pro | Lys | Gly | Val | Met | Leu | Ser | His | Arg | |
| | | | | 175 | | | | 180 | | | | | 185 | | | |
| gcc | gtg | ctg | gcc | aac | ctc | cgc | gcg | ttc | gac | cgc | agc | agc | ggg | cac | aac | 7406 |
| Ala | Val | Leu | Ala | Asn | Leu | Arg | Ala | Phe | Asp | Arg | Ser | Ser | Gly | His | Asn | |
| | | 190 | | | | | 195 | | | | | 200 | | | | |
| agc | gac | gac | gtg | ttc | ggc | agc | tgg | ctg | ccg | ctg | cac | cac | gac | atg | ggc | 7454 |
| Ser | Asp | Asp | Val | Phe | Gly | Ser | Trp | Leu | Pro | Leu | His | His | Asp | Met | Gly | |
| | | 205 | | | | 210 | | | | | 215 | | | | | |
| ctg | ttc | gcc | atg | ctc | acc | gcg | ggc | ctg | ctg | aac | ggc | gcc | ggc | gtc | gtg | 7502 |
| Leu | Phe | Ala | Met | Leu | Thr | Ala | Gly | Leu | Leu | Asn | Gly | Ala | Gly | Val | Val | |
| | | 220 | | | | 225 | | | | 230 | | | | | 235 | |
| ctg | atg | tcg | ccg | acg | gcc | ttc | gtc | cgc | cgg | ccg | gcg | gac | tgg | ctg | cgg | 7550 |
| Leu | Met | Ser | Pro | Thr | Ala | Phe | Val | Arg | Arg | Pro | Ala | Asp | Trp | Leu | Arg | |
| | | | | 240 | | | | | 245 | | | | | 250 | | |
| atg | atg | gac | cgc | tac | cgg | gtc | acc | atc | tcc | gcc | gcg | ccc | aac | ttc | gcg | 7598 |
| Met | Met | Asp | Arg | Tyr | Arg | Val | Thr | Ile | Ser | Ala | Ala | Pro | Asn | Phe | Ala | |
| | | | 255 | | | | | 260 | | | | | 265 | | | |
| tac | gac | ctg | tgc | gtg | cgc | gcc | gtg | cgg | gac | gag | cag | atc | gcc | ggc | ctc | 7646 |
| Tyr | Asp | Leu | Cys | Val | Arg | Ala | Val | Arg | Asp | Glu | Gln | Ile | Ala | Gly | Leu | |
| | | 270 | | | | | 275 | | | | | 280 | | | | |
| gac | ctg | tcc | cgc | atc | cgc | acg | ctc | tac | aac | gga | tcg | gag | ccg | gtc | aac | 7694 |
| Asp | Leu | Ser | Arg | Ile | Arg | Thr | Leu | Tyr | Asn | Gly | Ser | Glu | Pro | Val | Asn | |
| | | 285 | | | | 290 | | | | 295 | | | | | | |
| ccg | gcc | acc | gtc | cgg | gcg | ttc | acc | gag | cgc | ttc | gcc | ccc | ttc | ggc | ctg | 7742 |
| Pro | Ala | Thr | Val | Arg | Ala | Phe | Thr | Glu | Arg | Phe | Ala | Pro | Phe | Gly | Leu | |
| | | 300 | | | 305 | | | | | 310 | | | | | 315 | |
| cac | acc | cac | gcg | gtg | aac | ccc | tgc | tac | ggc | atg | gcc | gag | ttc | acc | gcg | 7790 |
| His | Thr | His | Ala | Val | Asn | Pro | Cys | Tyr | Gly | Met | Ala | Glu | Phe | Thr | Ala | |
| | | | 320 | | | | | | 325 | | | | | 330 | | |
| tac | gtg | tcg | acg | aag | gtc | ttc | gag | gcg | ccg | gcg | gtc | ttt | ctt | ccc | gcc | 7838 |
| Tyr | Val | Ser | Thr | Lys | Val | Phe | Glu | Ala | Pro | Ala | Val | Phe | Leu | Pro | Ala | |
| | | | 335 | | | | | 340 | | | | | 345 | | | |

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| | | | | | | | | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------|
| gac Asp | cct Pro | cgc Arg | gcg Ala | ctg Leu | gag Glu | gac Asp | gcc Ala | gcg Ala | tgc Ser | ccg Pro | gcc Ala | ctg Leu | cgc Arg | ccg Pro | gcc Ala | 7886 |
| | | 350 | | | | | 355 | | | | | 360 | | | | |
| gac Asp | ccc Pro | gcc Ala | gcg Ala | gcc Ala | cgg Arg | gag Glu | ata Ile | ccg Pro | ggg Gly | gtc Val | ggc Gly | cgg Arg | gtg Val | ccc Pro | gac Asp | 7934 |
| | 365 | | | | | 370 | | | | | 375 | | | | | |
| ttc Phe | gag Glu | gtg Val | ctc Leu | atc Ile | gtc Val | gac Asp | ccg Pro | gac Asp | ggg Gly | cta Leu | cgg Arg | ccg Pro | ctg Leu | ccc Pro | gag Glu | 7982 |
| 380 | | | | | 385 | | | | | 390 | | | | | 395 | |
| ggc Gly | cgg Arg | gtc Val | ggc Gly | gag Glu | atc Ile | tgg Trp | ctg Leu | cgc Arg | ggg Gly | ccc Pro | ggc Gly | gcg Ala | ggc Gly | gcc Ala | ggc Gly | 8030 |
| | | | | 400 | | | | | 405 | | | | | 410 | | |
| tac Tyr | tgg Trp | ggc Gly | agg Arg | acc Thr | gag Glu | ctc Leu | aac Asn | ccc Pro | ggc Gly | atc Ile | ttc Phe | gac Asp | gcc Ala | agg Arg | ccc Pro | 8078 |
| | | | 415 | | | | | 420 | | | | | 425 | | | |
| gcg Ala | ggc Gly | gac Asp | ggc Gly | cag Gln | gac Asp | ggc Gly | ggc Gly | tgg Trp | gtg Val | cga Arg | acg Thr | ggg Gly | gac Asp | ctg Leu | ggg Gly | 8126 |
| | 430 | | | | | 435 | | | | | | 440 | | | | |
| gcg Ala | ctg Leu | acc Thr | gga Gly | ggc Gly | gag Glu | ctg Leu | ttc Phe | ctc Leu | acc Thr | gga Gly | cgc Arg | ctc Leu | aag Lys | gag Glu | ctg Leu | 8174 |
| | 445 | | | | | 450 | | | | | 455 | | | | | |
| ctc Leu | atc Ile | gtg Val | cac His | ggc Gly | cgc Arg | aac Asn | ctg Leu | gcc Ala | ccg Pro | cac His | gac Asp | ctc Leu | gag Glu | cgg Arg | gag Glu | 8222 |
| 460 | | | | | 465 | | | | | 470 | | | | | 475 | |
| gcc Ala | cgg Arg | gcc Ala | gcg Ala | cac His | gac Asp | gcg Ala | gtg Val | gac Asp | cac His | cag Gln | atc Ile | ggg Gly | gcg Ala | gcg Ala | ttc Phe | 8270 |
| | | | | 480 | | | | | 485 | | | | 490 | | | |
| ggg Gly | gtg Val | ccg Pro | gcg Ala | ccc Pro | gac Asp | gag Glu | cgg Arg | atc Ile | gtg Val | ctg Leu | gtg Val | cag Gln | gag Glu | gtg Val | cat His | 8318 |
| | | | 495 | | | | | 500 | | | | | 505 | | | |
| ccg Pro | cgc Arg | acg Thr | ccg Pro | ctc Leu | gac Asp | gag Glu | ctg Leu | ccg Pro | cgg Arg | gtg Val | gcg Ala | agc Ser | gcc Ala | gtc Val | agc Ser | 8366 |
| | | 510 | | | | | 515 | | | | | 520 | | | | |
| cgc Arg | cgg Arg | ctc Leu | acc Thr | gtc Val | tcc Ser | ttc Phe | ggc Gly | gtg Val | ccg Pro | gta Val | cgc Arg | aac Asn | gtg Val | ctg Leu | ctg Leu | 8414 |
| | 525 | | | | | 530 | | | | | 535 | | | | | |
| gtg Val | cgg Arg | cgc Arg | ggc Gly | acg Thr | gtg Val | cgc Arg | cgg Arg | acc Thr | acg Thr | agc Ser | ggc Gly | aag Lys | atc Ile | cgc Arg | cgg Arg | 8462 |
| 540 | | | | | 545 | | | | | 550 | | | | | 555 | |
| acc Thr | gcg Ala | gtc Val | cgc Arg | gag Glu | cgg Arg | ttc Phe | ctg Leu | gcc Ala | ggc Gly | ggc Gly | atc Ile | acg Thr | gcg Ala | ctg Leu | cac His | 8510 |
| | | | | 560 | | | | | 565 | | | | | 570 | | |
| gcc Ala | gag Glu | ctc Leu | gag Glu | ccg Pro | gcg Ala | ctg Leu | cgg Arg | ccg Pro | gtg Val | cag Gln | gcg Ala | ggc Gly | gcg Ala | ggc Gly | cga Arg | 8558 |
| | | | 575 | | | | | 580 | | | | | 585 | | | |
| tga | | | | | | | | | | | | | | | | 8561 |
| ccgtacgcc | gctggcgcca | ccgcggagg | tgcgcctgga | cgacctgctc | ggccccgagg | | | | | | | | | | | 8621 |

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acgcatggga cgccgagacg gccgcccgcg acatcgccga ggagttcccg gcccggtgc 8681
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ccccggcgga ccacgagcgg ctctgcacc tgtggcgtgc ggtcgcccgg cgcgacctga 8801
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ggggtggccc ggccggggtg gcccggcacg cggccgcgt gcccgggcag gcgcggcgga 9941
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tgccgcgcgc ctacgagtgg tgcacgcgg gcgcggcgt cctgctgctg tggacctcgg 10061
cggagggccg gcacaccgcg gaccgctct gggcggaagg cctgtgggtg ctggccgcgc 10121
tgctgcccgt gcgcggggag ctggcccggg tgcctgcggg gccggcgccc gateccggcc 10181
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gtgaaccggt gaccccgctt ggcacggccc tgcggcgccc cgcgggcacc gtcggggcg 10301
aggacggccg

gtg acc 10317
Val Thr
1

gcc gcg gcg ctc gag aag ctg ctc ggc gac gcc cgc gac ccc ggc aac 10365

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| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Ala | Ala | Ala | Leu | Glu | Lys | Leu | Leu | Gly | Asp | Ala | Arg | Asp | Pro | Gly | Asn | |
| | 5 | | | | | | 10 | | | | | 15 | | | | |
| cgc | gtc | ggc | tat | gcg | gcc | gtg | ctc | gcc | gcc | gac | gag | cgg | cag | gag | atg | 10413 |
| Pro | Val | Gly | Tyr | Ala | Ala | Val | Leu | Ala | Ala | Asp | Glu | Arg | Gln | Glu | Met | |
| | 20 | | | | | 25 | | | | 30 | | | | | | |
| ctg | gcc | gag | ggc | gag | cgg | ctg | ctc | gac | cgc | tat | cag | ctc | aac | gcc | gag | 10461 |
| Leu | Ala | Glu | Gly | Glu | Arg | Leu | Leu | Asp | Arg | Tyr | Gln | Leu | Asn | Ala | Glu | |
| | 35 | | | | 40 | | | | | 45 | | | | | 50 | |
| ttc | gtg | cgc | gtg | gcg | tac | ggc | ggc | cgg | ctg | gcc | cgc | gcc | gac | cgg | ctg | 10509 |
| Phe | Val | Pro | Val | Ala | Tyr | Gly | Gly | Arg | Leu | Ala | Arg | Ala | Asp | Arg | Leu | |
| | | | | 55 | | | | 60 | | | | | | 65 | | |
| gcc | gag | gtg | ctg | cgc | gcg | gtc | tgg | cgg | cgc | gac | cgc | tgc | ctg | ggg | ctg | 10557 |
| Ala | Glu | Val | Leu | Arg | Ala | Val | Trp | Arg | Arg | Asp | Pro | Cys | Leu | Gly | Leu | |
| | | | 70 | | | | | 75 | | | | | 80 | | | |
| ggc | tac | ggc | ttc | agc | tcg | ctc | atc | gcc | tcg | gtg | aac | gtg | tgg | tgc | gcc | 10605 |
| Gly | Tyr | Gly | Phe | Ser | Ser | Leu | Ile | Ala | Ser | Val | Asn | Val | Trp | Cys | Ala | |
| | | 85 | | | | | 90 | | | | | 95 | | | | |
| ggc | aac | gag | gag | caa | cgg | cgc | cgg | gcg | gcc | ggc | ctg | ctg | ctg | gcc | aac | 10653 |
| Gly | Asn | Glu | Glu | Gln | Arg | Arg | Arg | Ala | Ala | Gly | Leu | Leu | Leu | Ala | Asn | |
| | 100 | | | | | 105 | | | | | 110 | | | | | |
| aag | cgc | atc | gcg | gcc | gcg | ttc | cac | gag | ctc | gcg | cac | ggc | acc | gac | ttc | 10701 |
| Lys | Arg | Ile | Ala | Ala | Ala | Phe | His | Glu | Leu | Ala | His | Gly | Thr | Asp | Phe | |
| | 115 | | | | 120 | | | | | 125 | | | | | 130 | |
| tcc | gcc | gcc | gag | tgc | gcg | gcc | cgc | cgc | gcc | ggc | ggc | gga | tgg | gtg | ctg | 10749 |
| Ser | Ala | Ala | Glu | Cys | Ala | Ala | Arg | Pro | Ala | Gly | Gly | Gly | Trp | Val | Leu | |
| | | | | 135 | | | | | 140 | | | | | 145 | | |
| tcc | ggg | cac | aag | gag | atc | gtg | acg | aac | ctg | cgc | cgg | gcc | gag | gcg | atg | 10797 |
| Ser | Gly | His | Lys | Glu | Ile | Val | Thr | Asn | Leu | Arg | Arg | Ala | Glu | Ala | Met | |
| | | | 150 | | | | | 155 | | | | | 160 | | | |
| gtg | ctg | ttc | gcc | cgc | acc | ggc | gag | gcg | cgc | ggc | agc | cgg | tcg | cac | agc | 10845 |
| Val | Leu | Phe | Ala | Arg | Thr | Gly | Glu | Ala | Arg | Gly | Ser | Arg | Ser | His | Ser | |
| | | 165 | | | | | 170 | | | | | 175 | | | | |
| cag | ttc | ctg | ctg | gtg | cgc | gac | gag | ctg | cgc | gcc | gcg | cgg | gcg | gtg | gac | 10893 |
| Gln | Phe | Leu | Leu | Val | Arg | Asp | Glu | Leu | Pro | Ala | Ala | Arg | Ala | Val | Asp | |
| | 180 | | | | | 185 | | | | | 190 | | | | | |
| cgc | cgc | cgg | tat | cgc | ggc | agc | ggg | atg | cgc | ggc | atc | gac | ctg | ggc | ggg | 10941 |
| Arg | Pro | Arg | Tyr | Pro | Gly | Ser | Gly | Met | Arg | Gly | Ile | Asp | Leu | Gly | Gly | |
| | 195 | | | | 200 | | | | | 205 | | | | 210 | | |
| ctg | gtc | ttc | gac | gac | tgc | cgc | gtg | cgc | tcc | tcc | gcg | ctg | ttg | ggc | gaa | 10989 |
| Leu | Val | Phe | Asp | Asp | Cys | Pro | Val | Pro | Ser | Ser | Ala | Leu | Leu | Gly | Glu | |
| | | | | 215 | | | | | 220 | | | | 225 | | | |
| cag | gga | cac | ggc | atc | gag | gtg | gcg | ctg | cgc | gcc | tat | cag | gtc | acc | cgg | 11037 |
| Gln | Gly | His | Gly | Ile | Glu | Val | Ala | Leu | Arg | Ala | Tyr | Gln | Val | Thr | Arg | |
| | | | 230 | | | | | 235 | | | | | 240 | | | |
| atg | gtg | tcg | cgc | gcc | ctg | ctg | gtg | ggc | cgc | ctg | gac | agc | gcg | gtg | cgg | 11085 |
| Met | Val | Ser | Pro | Ala | Leu | Leu | Val | Gly | Pro | Leu | Asp | Ser | Ala | Val | Arg | |
| | | 245 | | | | | 250 | | | | | 255 | | | | |
| ctg | gcc | acc | gag | atg | gcg | atg | gag | cgc | cgc | ctg | tac | ggg | gcc | gcc | gtc | 11133 |

APPENDIX A

| | | | | | | | | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------|
| Leu 260 | Ala | Thr | Glu | Met | Ala | Met 265 | Glu | Arg | Arg | Leu | Tyr 270 | Gly | Ala | Ala | Val | |
| gcc 275 | gac Ala | ctg Asp | ccg Leu | tac Tyr | gtg Val | cgc Arg | acc Thr | acc Thr | atc Ile | gcg Ala | cgc Arg | gcc Ala | tat Tyr | gct Ala | gcc Ala | 11181 |
| ctg Leu | ctc Leu | acc Thr | gtc Val | gac Asp | gtc Val | ttc Phe | tgc Ser | ggc Gly | gtg Val | ggc Gly | ctg Leu | cgg Arg | gcg Ala | ctg Leu | cac His | 11229 |
| ctg Leu | ctg Leu | ccg Pro | gag Glu | gcc Ala | acg Thr | gcc Ala | ggg Gly | tac Tyr | gcg Ala | ccc Pro | gcc Ala | gtg Val | aag Lys | tac Tyr | ctg Leu | 11277 |
| acc Thr | gcg Ala | cag Gln | atc Ile | gtg Val | ctg Leu | gac Asp | gcg Ala | atc Ile | gac Asp | gat Asp | ctg Leu | cgc Arg | tgc Ser | gtg Val | ctg Leu | 11325 |
| ggc Gly | gcg Ala | cag Gln | ggg Gly | tat Tyr | ctg Leu | cgg Arg | cag Gln | ggc Gly | ccg Pro | tac Tyr | gcg Ala | atg Met | ttc Phe | cag Gln | aag Lys | 11373 |
| ctg Leu | gtc Val | cgc Arg | gac Asp | gcc Ala | gcg Ala | ccc Pro | gcc Ala | tcc Ser | ttc Phe | gcg Ala | cac His | gtg Val | tcc Ser | cgc Arg | gcg Ala | 11421 |
| gcc Ala | tgc Cys | ctg Leu | gtg Val | atg Met | ctg Leu | ctg Leu | ccg Pro | cac His | ctg Leu | ccc Pro | cgg Arg | ctg Leu | gcc Ala | cgc Arg | cgg Arg | 11469 |
| tgc Ser | tgg Trp | acg Thr | gcc Ala | gag Glu | gag Glu | ccg Pro | ccg Pro | ccg Pro | gac Asp | aac Asn | gtg Val | ttc Phe | acc Thr | ctc Leu | ggc Gly | 11517 |
| ggc Gly | gag Glu | ctg Leu | tcc Ser | ccg Pro | ttg Leu | gac Asp | ttc Phe | tcc Ser | cgg Arg | ctg Leu | gtc Val | agc Ser | ggc Gly | atg Met | cgt Arg | 11565 |
| ggc Gly | gac Asp | ccg Pro | ctg Leu | gcc Ala | ggc Gly | gtc Val | ctg Leu | cac His | gac Asp | tgc Ser | tgg Trp | cac His | gac Asp | gag Glu | ggc Gly | 11613 |
| ccg Pro | gtc Val | ggc Gly | cgg Arg | ttc Phe | gcc Ala | gag Glu | cgg Arg | ttc Phe | cac His | cgg Arg | gag Glu | ctg Leu | acc Thr | ggc Gly | ctg Leu | 11661 |
| cgg Arg | gac Asp | gcc Ala | tgc Cys | cgg Arg | gag Glu | ctg Leu | ggg Gly | ccg Pro | gcc Ala | gac Asp | atc Ile | acg Thr | atc Ile | gac Asp | gcc Ala | 11709 |
| aac Asn | ccg Pro | gcc Ala | gcc Ala | ttc Phe | gcg Ala | ctg Leu | gcc Ala | gac Asp | cgg Arg | tac Tyr | acc Thr | gtg Val | ctg Leu | ctg Leu | gcc Ala | 11757 |
| gcg Ala | gcc Ala | tgc Cys | gcc Ala | ctc Leu | ggg Gly | gtg Val | tgg Trp | cgc Arg | gcc Ala | ggg Gly | cgg Arg | ctc Leu | cac His | cgg Arg | | 11805 |
| ccg Pro | gcg Ala | ctg Leu | ctg Leu | gcc Ala | gtc Val | ctg Leu | gac Asp | ggg Gly | ctg Leu | gcc Ala | ggc Gly | cgg Arg | ctc Leu | ggc Gly | ggc Gly | 11853 |
| gag Leu | gcc Leu | gtg Leu | ctg Leu | agc Ala | gtg Val | gcc Leu | gag Asp | cgc Gly | gag Leu | cac Ala | gtg Gly | gag Arg | cac Leu | cag Gly | ctc Gly | 11901 |

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| | |
|--|-------|
| Glu Ala Val Leu Ser Val Ala Glu Arg Glu His Val Glu His Gln Leu | |
| 515 520 525 530 | |
| ttc gag atg gcc gcc gac cgg gta cgc acc agc cgg ctg ctg gac ctg | 11949 |
| Phe Glu Met Ala Ala Asp Arg Val Arg Thr Ser Arg Leu Leu Asp Leu | |
| 535 540 545 | |
| agc gcc cgt cag ctc ccc ggc | |
| Ser Ala Arg Gln Leu Pro Gly | |
| 550 | |
| tga ccgggcgaga | 11983 |
| tcaggcagcc ggcgagcgcg ggcgcgcccg agggccggct cagatagctg agcaccagct | 12043 |
| cctcgagctc gaccgctcc accgtccacg gccgcggggg caggtccacc tcggcccgcga | 12103 |
| ccactccccc gctgtacgag ccgaagtcc ccaccagat gggctccatc cccggcggga | 12163 |
| ggcggtccag ctgcgcgcgc ggcgcgatga tgcgggtggtg ccgggcgagc aggtcccgga | 12223 |
| cgtcgcgggc gacgagcacc cgggagtcgg acagcacgat caggtggtcg cagagccgct | 12283 |
| ccacctctcc ggacgggtga ccggagatca gcacgctcgc gtcgatctcg gcgacgaagt | 12343 |
| cgagcacgcc gcgcaggaac gaggcgcggg ccggcgcac cagcacccgc ccgggctcgt | 12403 |
| cgagcacgag cagctccggg cgcttgccgc cggccagggt caacgccagc tcggcccgcct | 12463 |
| ggccggcgga gagccggtcc gcgcgcggg tacgcggaat gccggccgag gcgatgcgcc | 12523 |
| ggtcggccag ccgcgggtcc caccgcggat tgagccgcgc gcccatcgtg aggtggtctt | 12583 |
| ccaccgtgaa cgagccgtac accgcgggt cccgcgggtac gtatcccacc cgcgccaggt | 12643 |
| gcgcgcgcc cgcgtccggg cgctccccc gaaccggat ccggccccgg ctgcggcgga | 12703 |
| ccatcccga gcaagctgc agcagtgtg acttgcccga gccgcgcggt ccgaccagcg | 12763 |
| cgatcacccg tccggaggga acggagagcg tgcagtcggt cagggccctc cgccggccgt | 12823 |
| agcgtttcgt cagggccctc gcctgcagaa cgggagtgga gcgctcgtga gacatggcct | 12883 |
| tcatcgtcgg ggagcgcccc ggggaccggt accgcctaa gaagggttga ttccgggcgt | 12943 |
| caccctactt ttgaccctt ggcggcgccc gattcgcccc tatccttggg cggc | |
| atg aac atc gcg gcc gca | 13015 |
| Met Asn Ile Ala Ala Ala | |
| 1 5 | |
| acc ggt ccc gcc gcc ggc gac ggc gcc ggc atc cgt acc ctt gga tcc | 13063 |
| Thr Gly Pro Ala Ala Gly Asp Gly Ala Gly Ile Arg Thr Leu Gly Ser | |
| 10 15 20 | |
| gtg cgg acg gcg gac agg acg acc acc atg gtg gcc gac gcg ggg ctg | 13111 |
| Val Arg Thr Ala Asp Arg Thr Thr Thr Met Val Ala Asp Ala Gly Leu | |
| 25 30 35 | |
| gcc gtc ctc ttc gtg gcc gcc gtc gtc gtc gag gcc gtc gcc gtc gcg | 13159 |
| Ala Val Leu Phe Val Ala Ala Val Val Val Glu Ala Val Ala Val Ala | |
| 40 45 50 | |
| cag agc tgg ggc ctg gcc tac tgg ttg atc ggc ggc gcg gcc gcg acg | 13207 |

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|------------|-----|------------|------------|------------|------------|------------|------------|-----|-----|-----------|-----|-----|-----|-----|------------|-------|
| Gln 55 | Ser | Trp | Gly | Leu | Ala 60 | Tyr | Trp | Leu | Ile | Gly 65 | Gly | Ala | Ala | Ala | Thr 70 | |
| ctc | gtc | tgc | ctg | ctc | gcc | ctg | atc | cgg | cgg | cgc | ggc | ccg | gtg | ccg | tgc | 13255 |
| Leu | Val | Cys | Leu | Leu 75 | Ala | Leu | Ile | Arg | Arg | Arg | Gly | Pro | Val | Pro | Cys | |
| gcc | gcg | gcc | ggg | ctc | acg | atc | gcg | gcg | ggc | gcc | gtc | gtc | acg | gcg | gcc | 13303 |
| Ala | Ala | Ala | Gly 90 | Leu | Thr | Ile | Ala | Ala | Gly | Ala | Val | Val | Thr | Ala | Ala | |
| gtg | ctg | cac | atg | ccg | gcc | gag | ccc | ggc | ccg | gcc | atg | gcg | ctg | gcc | ctg | 13351 |
| Val | Leu | His 105 | Met | Pro | Ala | Glu | Pro 110 | Gly | Pro | Ala | Met | Ala | Leu | Ala | Leu | |
| gcc | gtc | ctc | acc | ggc | tgc | gcg | gtg | cgg | gcc | gca | ccc | acg | atc | ccc | gcc | 13399 |
| Ala | Val | Leu | Thr | Gly | Ser | Ala | Val 125 | Arg | Ala | Ala | Pro | Thr | Ile | Pro | Ala | |
| ttc | gcc | gtg | ggc | ggc | gcc | gcc | ctc | ggc | gtg | gtc | gcc | ctc | agc | cag | gtg | 13447 |
| Phe 135 | Ala | Val | Gly | Gly | Ala | Ala | Leu 140 | Gly | Val | Val | Ala | Leu | Ser | Gln | Val 150 | |
| gcc | gcc | gcg | acc | tgg | gac | gcc | ggc | cgg | gcg | ccg | gtg | acc | tgg | ctg | aac | 13495 |
| Ala | Ala | Ala | Thr | Trp 155 | Asp | Ala | Gly | Pro | Ala | Pro | Val | Thr | Trp | Leu | Asn | |
| atc | ctc | acc | tgg | ctg | ggc | ggc | acg | gcc | acc | ggg | ttg | tgc | ctg | cgg | acg | 13543 |
| Ile | Leu | Thr | Trp 170 | Leu | Gly | Gly | Thr | Ala | Thr | Gly | Leu | Ser | Leu | Arg | Thr | |
| gtg | gac | ggc | cgg | gcc | cgc | gcg | aac | gcc | gag | cgc | atc | cgc | cag | gag | gaa | 13591 |
| Val | Asp | Gly 185 | Arg | Ala | Arg | Ala | Asn 190 | Ala | Glu | Arg | Ile | Arg | Gln | Glu | Glu | |
| cgc | ctc | gaa | ctg | gcc | cgg | gag | ctg | cac | gac | gtg | gtc | gcg | cac | cac | atc | 13639 |
| Arg | Leu | Glu | Leu | Ala | Arg | Glu 205 | Leu | His | Asp | Val | Val | Ala | His | His | Ile | |
| acc | ggc | atg | atc | ctg | cag | acc | cag | gcc | gcc | cag | gtg | ctc | gcg | cgg | cgc | 13687 |
| Thr 215 | Gly | Met | Ile | Leu | Gln 220 | Thr | Gln | Ala | Ala | Gln | Val | Leu | Ala | Arg | Arg | |
| gac | gcc | ggg | cgc | gtg | ccc | gag | cgg | ctg | gcg | gtc | atc | gaa | acg | gcc | ggc | 13735 |
| Asp | Ala | Gly | Arg | Val 235 | Pro | Glu | Arg | Leu | Ala | Val | Ile | Glu | Thr | Ala | Gly | |
| acc | gag | gcc | ctc | gcg | gcc | atg | cgc | cgg | gtc | gtg | ggc | ctg | ctg | cgc | gac | 13783 |
| Thr | Glu | Ala | Leu 250 | Ala | Ala | Met | Arg | Arg | Val | Val | Gly | Leu | Leu | Arg | Asp | |
| gcc | gac | gac | ggc | cca | ccg | tgc | gca | ccg | gag | ccc | gag | gag | ctg | agc | acg | 13831 |
| Ala | Asp | Asp | Gly | Pro | Pro | Ser | Ala 270 | Pro | Glu | Pro | Glu | Glu | Leu | Ser | Thr | |
| ctt | gtc | gag | cgc | ttc | tcc | cgg | cag | ggc | ggc | ccg | gtg | cgg | ctc | acc | act | 13879 |
| Leu 280 | Val | Glu | Arg | Phe | Ser | Arg | Gln 285 | Gly | Gly | Pro | Val | Arg | Leu | Thr | Thr | |
| ccc | gac | ggc | atg | aag | cag | tgg | ccg | atc | gag | gtg | acc | acc | acg | gtc | tac | 13927 |
| Pro 295 | Asp | Gly | Met | Lys | Gln 300 | Trp | Pro | Ile | Glu | Val | Thr | Thr | Thr | Val | Tyr 310 | |
| cgg | atc | gtc | cgc | gag | gcg | ctc | acc | aac | gtc | gcc | cgg | cac | gcg | ccg | cac | 13975 |

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|-------------|------------|------------|-------------|-------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Arg | Ile | Val | Arg | Glu | Ala | Leu | Thr | Asn | Val | Ala | Arg | His | Ala | Pro | His | |
| | | | | 315 | | | | | 320 | | | | | 325 | | |
| gca | ccc | aac | gtg | acc | gtg | acc | gtg | acc | gtg | gag | cag | gcc | gac | gag | atc | 14023 |
| Ala | Pro | Asn | Val | Thr | Val | Thr | Val | Thr | Val | Glu | Gln | Ala | Asp | Glu | Ile | |
| | | | 330 | | | | | | 335 | | | | 340 | | | |
| agg | gtc | gag | gtc | acc | aac | gac | gcg | gcg | gcg | gcc | cca | ccg | cgg | ttg | cac | 14071 |
| Arg | Val | Glu | Val | Thr | Asn | Asp | Ala | Ala | Ala | Ala | Pro | Pro | Arg | Leu | His | |
| | | 345 | | | | | 350 | | | | | 355 | | | | |
| cac | cgc | ggc | ggg | tac | ggg | ctg | gtc | ggc | atg | cga | gag | cgg | gtg | gag | agc | 14119 |
| His | Arg | Gly | Gly | Tyr | Gly | Leu | Val | Gly | Met | Arg | Glu | Arg | Val | Glu | Ser | |
| | 360 | | | | | 365 | | | | | 370 | | | | | |
| ctc | ggc | ggc | acg | ctg | agc | acg | ggc | ccc | cgt | ccc | ggc | ggc | ggc | tgg | tgc | 14167 |
| Leu | Gly | Gly | Thr | Leu | Ser | Thr | Gly | Pro | Arg | Pro | Gly | Gly | Gly | Trp | Ser | |
| 375 | | | | | 380 | | | | | 385 | | | | | 390 | |
| gtc | gcg | gcc | acc | ctg | ccc | aac | cca | ccg | agg | gag | cga | cga | | | | |
| Val | Ala | Ala | Thr | Leu | Pro | Asn | Pro | Pro | Arg | Glu | Arg | Arg | | | | |
| | | | | 395 | | | | | | 400 | | | | | | |
| tga | cgatccgtgt | | | | | | | | | | | | | | | 14219 |
| cctgatcgcc | gacgatcagg | cgatgatccg | cagtggcctg | cgctgatcc | tcgaggacga | | | | | | | | | | | 14279 |
| gcccacatc | gaggtggtgg | ccgaggccgt | cgacggcggtg | gacgcgggtcg | cacagggcgcg | | | | | | | | | | | 14339 |
| caagctgcgg | ccggacgtgt | gcctggtgga | catccgcctg | ccccgcctcg | acggcatcga | | | | | | | | | | | 14399 |
| ggtgacccgc | tcgctggccg | gccccggcgt | ggtcaatcct | ctgcgggtca | tcgtggtcac | | | | | | | | | | | 14459 |
| cacgttcgac | tcggacgaat | acgtctacgg | cgcgctacgc | ggcggggcg | tcggcttcat | | | | | | | | | | | 14519 |
| cctcaaggac | gccggcccga | cactgctggt | ggaggccgtc | cgggcgggcg | acaagggcga | | | | | | | | | | | 14579 |
| cgcgctggte | tcgccgtcgg | tcaccgtgcg | gctgctgaac | cacctgaacg | cctcgggcg | | | | | | | | | | | 14639 |
| gccggccggc | tcgagccca | ttccctctc | cgaccgcgag | ctcgaggtgg | cgcgggcgat | | | | | | | | | | | 14699 |
| cgcccgcg | cgacgaacc | aggagatcg | ggccgatctc | ttcatctcgc | tgagcacggt | | | | | | | | | | | 14759 |
| gaagggggcac | gcctccacga | tcagtcaca | attgggcgta | cgcaaccggg | tcggcggtggc | | | | | | | | | | | 14819 |
| ggcctggggc | tgggagaacc | ggctggtcga | ggggagctga | cccggcccg | gcgagcggtgc | | | | | | | | | | | 14879 |
| gaccggcgac | atccgcggtc | gaacgcccg | ggtgggcgga | cacgtggcg | acagcggccc | | | | | | | | | | | 14939 |
| gcggcaacca | tcatgcagct | cagatggtcg | ctgaggagga | ttc | | | | | | | | | | | | |
| gtg | gct | gct | caa | | | | | | | | | | | | | 14994 |
| Val | Ala | Ala | Gln | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | |
| ccg | gaa | gag | ttc | gat | gtc | atc | gtg | gtc | ggc | ggc | ggg | ccg | ggc | ggt | ttc | 15042 |
| Pro | Glu | Glu | Phe | Asp | Val | Ile | Val | Val | Gly | Gly | Gly | Pro | Gly | Gly | Ser | |
| 5 | | | | | 10 | | | | | 15 | | | | | 20 | |
| acg | gcc | gcg | gcg | ctg | acc | gcc | aag | cag | ggc | gcc | aag | gtg | ctg | ctg | ctg | 15090 |
| Thr | Ala | Ala | Ala | Leu | Thr | Ala | Lys | Gln | Gly | Ala | Lys | Val | Leu | Leu | Leu | |
| | | | | 25 | | | | | 30 | | | | | 35 | | |
| gag | cgg | gag | aag | ttc | ccg | cgg | tac | cag | atc | ggc | gaa | tcg | ctg | ctg | ccg | 15138 |

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| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Glu | Arg | Glu | Lys | Phe | Pro | Arg | Tyr | Gln | Ile | Gly | Glu | Ser | Leu | Leu | Pro | |
| | | | 40 | | | | | 45 | | | | | 50 | | | |
| tcc | acc | gtg | cac | ggg | gtc | tgc | aac | ctg | ctc | ggg | gtc | ggc | gac | gag | atc | 15186 |
| Ser | Thr | Val | His | Gly | Val | Cys | Asn | Leu | Leu | Gly | Val | Gly | Asp | Glu | Ile | |
| | | 55 | | | | | 60 | | | | | 65 | | | | |
| gcc | aag | gcc | ggg | ttc | atg | cgc | aag | cac | ggc | ggc | acg | ttc | aag | tgg | ggc | 15234 |
| Ala | Lys | Ala | Gly | Phe | Met | Arg | Lys | His | Gly | Gly | Thr | Phe | Lys | Trp | Gly | |
| | 70 | | | | | 75 | | | | | 80 | | | | | |
| acc | agt | acc | gag | ccg | tgg | acg | ttc | acc | ttc | gcc | acc | tcg | ccc | cgg | atg | 15282 |
| Thr | Ser | Thr | Glu | Pro | Trp | Thr | Phe | Thr | Phe | Ala | Thr | Ser | Pro | Arg | Met | |
| 85 | | | | | 90 | | | | | 95 | | | | | 100 | |
| gcc | ggg | ccg | acc | tcg | cac | gcg | ttc | cag | gtg | gag | cgc | cgc | cgg | ttc | gac | 15330 |
| Ala | Gly | Pro | Thr | Ser | His | Ala | Phe | Gln | Val | Glu | Arg | Arg | Arg | Phe | Asp | |
| | | | | 105 | | | | | 110 | | | | | 115 | | |
| cag | atc | ctg | ctg | gag | aac | gcg | cgc | cgg | ctg | ggc | gtc | gac | gtc | cgg | gag | 15378 |
| Gln | Ile | Leu | Leu | Glu | Asn | Ala | Arg | Arg | Leu | Gly | Val | Asp | Val | Arg | Glu | |
| | | | 120 | | | | | 125 | | | | | 130 | | | |
| aac | cac | ccg | gtg | acc | gag | gcg | atc | gcc | gac | gac | gag | cgg | gtc | cgc | ggc | 15426 |
| Asn | His | Pro | Val | Thr | Glu | Ala | Ile | Ala | Asp | Asp | Glu | Arg | Val | Arg | Gly | |
| | | 135 | | | | | 140 | | | | | 145 | | | | |
| gtc | cgt | ttc | acc | cag | gac | ggg | cag | acc | cgc | acc | gcg | ctg | gcg | cgc | ttc | 15474 |
| Val | Arg | Phe | Thr | Gln | Asp | Gly | Gln | Thr | Arg | Thr | Ala | Leu | Ala | Arg | Phe | |
| | 150 | | | | | 155 | | | | | 160 | | | | | |
| gtc | gtc | gac | gcc | tcg | ggc | aac | cgc | agc | acc | ctg | cac | acg | acg | gtc | ggc | 15522 |
| Val | Val | Asp | Ala | Ser | Gly | Asn | Arg | Ser | Thr | Leu | His | Thr | Thr | Val | Gly | |
| 165 | | | | | 170 | | | | | 175 | | | | | 180 | |
| ggc | acc | cgc | gaa | tac | tcg | ccg | ttc | ttc | cgc | aac | ctc | gcg | ctc | ttc | ggc | 15570 |
| Gly | Thr | Arg | Glu | Tyr | Ser | Pro | Phe | Phe | Arg | Asn | Leu | Ala | Leu | Phe | Gly | |
| | | | 185 | | | | | | 190 | | | | | 195 | | |
| tac | ttc | gag | aac | ggc | cgg | cgg | ctg | ccc | gcg | ccg | aac | tcc | ggc | aac | atc | 15618 |
| Tyr | Phe | Glu | Asn | Gly | Arg | Arg | Leu | Pro | Ala | Pro | Asn | Ser | Gly | Asn | Ile | |
| | | | 200 | | | | | 205 | | | | | 210 | | | |
| ctc | tgc | gtc | gcc | ttc | ggc | tcc | ggc | tgg | ttc | tgg | tac | atc | ccg | ctc | agc | 15666 |
| Leu | Cys | Val | Ala | Phe | Gly | Ser | Gly | Trp | Phe | Trp | Tyr | Ile | Pro | Leu | Ser | |
| | | 215 | | | | | 220 | | | | | 225 | | | | |
| gag | acg | ctg | acc | agc | gtc | ggc | gcg | gtg | gtc | cgc | cgg | gag | atg | gca | cac | 15714 |
| Glu | Thr | Leu | Thr | Ser | Val | Gly | Ala | Val | Val | Arg | Arg | Glu | Met | Ala | His | |
| | 230 | | | | | 235 | | | | | 240 | | | | | |
| aag | gtg | cag | ggc | gac | cag | gag | aag | gcg | ctg | ttc | gag | ctg | atc | gcc | gag | 15762 |
| Lys | Val | Gln | Gly | Asp | Gln | Glu | Lys | Ala | Leu | Phe | Glu | Leu | Ile | Ala | Glu | |
| 245 | | | | | 250 | | | | | 255 | | | | | 260 | |
| tgc | ccg | atg | atc | gcc | gac | ttc | ctc | ggg | gac | gcc | acc | cgg | gtc | acc | gag | 15810 |
| Cys | Pro | Met | Ile | Ala | Asp | Phe | Leu | Gly | Asp | Ala | Thr | Arg | Val | Thr | Glu | |
| | | | 265 | | | | | | 270 | | | | | 275 | | |
| ggc | gac | tac | ggc | cag | atc | cgg | gtc | cgc | aag | gac | tac | tcc | tac | tcc | agc | 15858 |
| Gly | Asp | Tyr | Gly | Gln | Ile | Arg | Val | Arg | Lys | Asp | Tyr | Ser | Tyr | Ser | Ser | |
| | | | 280 | | | | | 285 | | | | | 290 | | | |
| acc | tcg | tac | tgg | cgg | ccg | ggc | atg | tgc | ctg | gtc | ggc | gac | gcc | gcc | tgc | 15906 |

APPENDIX A

| | | | | | | | | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Thr | Ser | Tyr | Trp | Arg | Pro | Gly | Met | Cys | Leu | Val | Gly | Asp | Ala | Ala | Cys | |
| | | 295 | | | | | 300 | | | | | 305 | | | | |
| ttc | atc | gac | ccg | gtg | ttc | tcc | tcc | ggc | gtg | cac | ctg | gcg | acc | tac | agc | 15954 |
| Phe | Ile | Asp | Pro | Val | Phe | Ser | Ser | Gly | Val | His | Leu | Ala | Thr | Tyr | Ser | |
| | 310 | | | | | 315 | | | | | 320 | | | | | |
| ggc | ctg | ctc | gcg | gcc | cgc | tcc | atc | aac | agc | gtg | ctg | gcc | ggc | acg | gtg | 16002 |
| Gly | Leu | Leu | Ala | Ala | Arg | Ser | Ile | Asn | Ser | Val | Leu | Ala | Gly | Thr | Val | |
| | 325 | | | | 330 | | | | | 335 | | | | | 340 | |
| gac | gag | gac | cgc | gcc | ttc | acc | gag | ttc | gag | cag | cgc | tac | cgg | cgc | gag | 16050 |
| Asp | Glu | Asp | Arg | Ala | Phe | Thr | Glu | Phe | Glu | Gln | Arg | Tyr | Arg | Arg | Glu | |
| | | | | 345 | | | | | 350 | | | | | 355 | | |
| ttc | ggc | gtc | ttc | cac | gac | ttc | ctg | gtg | agc | ttc | tac | gac | atg | cac | gtc | 16098 |
| Phe | Gly | Val | Phe | His | Asp | Phe | Leu | Val | Ser | Phe | Tyr | Asp | Met | His | Val | |
| | | | 360 | | | | | 365 | | | | | 370 | | | |
| gat | gag | agc | tcg | tac | ttc | tgg | gcc | gcc | cgc | aag | gtg | acc | gag | agc | agc | 16146 |
| Asp | Glu | Ser | Ser | Tyr | Phe | Trp | Ala | Ala | Arg | Lys | Val | Thr | Glu | Ser | Ser | |
| | | 375 | | | | | 380 | | | | | 385 | | | | |
| gca | ccg | gcc | atg | gag | tcg | ttc | acc | gag | ttg | gtc | ggc | ggc | atc | gcc | tcc | 16194 |
| Ala | Pro | Ala | Met | Glu | Ser | Phe | Thr | Glu | Leu | Val | Gly | Gly | Ile | Ala | Ser | |
| | 390 | | | | | 395 | | | | | 400 | | | | | |
| ggc | gag | gac | gcg | ctg | acc | ggc | tcc | acc | gag | ctg | gtg | cgg | cgg | cac | tcc | 16242 |
| Gly | Glu | Asp | Ala | Leu | Thr | Gly | Ser | Thr | Glu | Leu | Val | Arg | Arg | His | Ser | |
| | 405 | | | | 410 | | | | 415 | | | | | | 420 | |
| cgg | cag | acc | gcg | gag | ctg | ggc | cag | gcg | gtg | gcc | ggc | ctc | gag | gag | ggc | 16290 |
| Arg | Gln | Thr | Ala | Glu | Leu | Gly | Gln | Ala | Val | Ala | Gly | Leu | Glu | Glu | Gly | |
| | | | 425 | | | | | | 430 | | | | 435 | | | |
| ggc | acc | ggc | ttc | ctg | cgc | ggg | tcg | agc | gtc | gtg | gcg | cag | gcc | atg | ttc | 16338 |
| Gly | Thr | Gly | Phe | Leu | Arg | Gly | Ser | Ser | Val | Val | Ala | Gln | Ala | Met | Phe | |
| | | | 440 | | | | | 445 | | | | | 450 | | | |
| gaa | ggc | tcg | cag | atc | cag | gcc | ggc | gcg | atc | ctg | ggc | ccg | gag | ggc | acg | 16386 |
| Glu | Gly | Ser | Gln | Ile | Gln | Ala | Gly | Ala | Ile | Leu | Gly | Pro | Glu | Gly | Thr | |
| | | 455 | | | | | 460 | | | | | 465 | | | | |
| cag | gag | cag | ccg | ctg | ttc | gag | ggc | ggg | ctg | acc | cct | tcc | ggc | aac | ggc | 16434 |
| Gln | Glu | Gln | Pro | Leu | Phe | Glu | Gly | Gly | Leu | Thr | Pro | Ser | Gly | Asn | Gly | |
| | 470 | | | | | 475 | | | | | 480 | | | | | |
| ctc | acg | tgg | gtc | gcc | gcc | gac | | | | | | | | | | |
| Leu | Thr | Trp | Val | Ala | Ala | Asp | | | | | | | | | | |
| | 485 | | | | 490 | | | | | | | | | | | |
| tga | gcacacgaac | agagatcccc | tcgccgccgg | | | | | | | | | | | | | 16488 |
| cggcgagggg | atctctcggt | gcccgggtca | gcccgggtgg | gccggctcgg | cgaccgccgg | | | | | | | | | | | 16548 |
| gggcggcgcc | ggccggtgcg | ggcgaggggc | ggcgagcagc | tccacacca | cctgaccaca | | | | | | | | | | | 16608 |
| gacgtacgcc | gtggcgagca | cgcgcaggac | ggttgcccag | gcgtactgcc | gctcgctcgg | | | | | | | | | | | 16668 |
| cagcgaaccg | gcgagccagc | tccacaccgc | gagccagtag | agcacctcgg | cggcctgcc | | | | | | | | | | | 16728 |
| gacggcccag | tcgcgcacca | ccggccaccg | cgggaccgc | ccacgggcga | tcaccacgag | | | | | | | | | | | 16788 |
| cggcaggagc | cagagcgcg | actgcggcga | gtagaccttg | ttggtcagca | ggaacgcgcc | | | | | | | | | | | 16848 |

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|-------------|-------------|--------------|-------------|-------------|-------------|-------|
| gacggccagg | cagggcagtt | gcgccaggtc | cggcgggccgg | cgcgaccgca | gagccagcac | 16908 |
| cgcgatcccg | gccagcagca | cgcggaacgt | cgccagggcg | acggcgttca | ccgccggcat | 16968 |
| gtgcaggccg | agcccgtcca | gcgcgaacca | gagcgaccgg | aactcgggcc | cgcgcccggc | 17028 |
| gttgaaccgc | cagaactcca | tccagccgtc | cggttgcagc | gcgaccaccg | gcaggttgac | 17088 |
| cagaagccag | gccccggcgg | caccggcggc | cacgcggggcg | aaccgcccga | tccgccgctg | 17148 |
| ccggaggcag | agcagcagca | ccggggccgag | cagcaccagc | gggaacagct | tggccgcccgt | 17208 |
| gcccgacccg | atcagcacgc | cggccagcag | cgggcgggtcc | cgttcccagg | cgaggatcgc | 17268 |
| gagcacccgc | gccgcgaccg | cgagcaggtc | ccagttcacc | gtgccggcca | ggatcagcac | 17328 |
| cgggtcgggcg | gcgaccagca | gcgcgtcgcc | cggccgcccg | ccgggtcgggc | gcagcacccgc | 17388 |
| accggtcgcc | cacacgggtca | ggaccgcgag | ggcgagcagc | accaggaccg | tcgtagaggaa | 17448 |
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| cgtggcgctcc | atcaggtagc | cggtagggac | cgggtactcc | agcggctggg | cgcccggccc | 17568 |
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| gctgtagcag | tagcgggcca | acagcgctgc | ggtgtcgctcc | ggccagccag | cggcctggca | 17688 |
| gggcagcttc | tgccagaagc | cggcgggcgaa | cgccaggacc | gtgagcccgg | ccggtagcca | 17748 |
| tgcgggacg | gtcacgccgc | gcaggggtccc | tggatggcca | gctcggtcac | ctgccagggtg | 17808 |
| gcacccgagc | gggcgacggt | cgccaggatc | gcgctggggc | cgctgccctg | ctgcccgccc | 17868 |
| accttgctcg | ccgggggtccc | gtcggccttc | gtcagcggcc | aggcgctgat | gtcgatgcag | 17928 |
| ccgcgcagct | ggacgcgggt | gggggtcgcc | ggcggggtga | gcccggtgac | gaccggctcg | 17988 |
| tcgatgcgcg | gctcgccgct | ggtgtgcacg | ccctgctgct | ggtaggaggc | gaggatgccc | 18048 |
| tggaaggcca | tcagcgcccc | gccggacgcg | tacttgccga | tctcggtggt | gtcggctcgtg | 18108 |
| cccttgttgc | tgcgcgcgac | gaaggcgctg | agcgccctgg | gataggctctg | ggtgcccgcg | 18168 |
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| agtcgatgc | cgggtggtccg | acgcaggttt | cgcaggtg | ttctcccgt | cttctcgagg | 18348 |
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| aggtagaggg | tgcgcggatg | cagccggggc | aggccgcggc | ggcgcatcag | cgccgccatc | 18468 |
| cgcacggcga | gcagcgagtt | gccgccgagg | tccaagaagt | tgtccgagac | ggtcacccggg | 18528 |
| cagccgaaga | cctgctgcca | cacgtcggcc | aggtcgcccg | cgagcccgtc | ctcaccgggg | 18588 |
| ccggccggcg | tgcgcgcagc | gtcggcgggc | gggcgcgcgg | gctcgggcag | ggcggccttg | 18648 |
| tccaccttgc | cgttcggcgt | catcggcagc | gcgtccagga | acgtgaaggt | cgccgggcac | 18708 |
| atgtaggcgc | gcagcatccg | ggccgcgtgc | tgggccaccg | gcggcggtggc | gccggccctcg | 18768 |

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|------------|-------------|------------|-------------|-------------|-------------|-------|
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| acgaccgcgg | ccgccgccac | cccggcgcac | tcggtgagca | cgccccggat | ctcgtccagc | 18888 |
| tcgatccgga | agccgcgcag | cttgacctgg | tcgtcgagcc | ggcccagggtg | ttccagggtg | 18948 |
| ccgtcgggca | gcagccggcc | gcggtcgcgc | gagcggtagc | agcgccggcc | gtccggggccg | 19008 |
| gtgaagaacc | gctcggcggt | cagctccggg | cggttgaggt | agccgatcgc | cacgccggcg | 19068 |
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| agcgcggaca | cgttggcgtg | cgggacgacc | acgcccttgg | gccggcccgt | ggaaccggac | 19668 |
| gtgtagatga | cataggccgg | ccgctccggg | ccggccgggg | tggcgagcgg | gatgcccggg | 19728 |
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| aggagcacgg | cgacgagctc | ggccgagcgg | tcgaggcaga | cgccgaccgc | gtcgccgtcg | 19968 |
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| taggtgtgcc | gaccccgatc | gtccgagacg | gcgacggccg | tgggacgagc | ggcgacctgc | 20088 |
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| gtgagcgggt | gggtggggcg | caggaagggc | acgtactcgt | ccggcggggc | gaggtcgccg | 20388 |
| tcgaaggcca | gcgccaccgg | gccggggacc | gcggcgggcg | cggagcccgga | ggcggcgctg | 20448 |
| gagcccgccg | ccacacccgga | gcccgccgcc | gcgcccgaagc | ccgcgcgcgc | gcccgagccc | 20508 |
| gcagccgcgc | ccggctcgta | ccgggcgagg | accttggcga | gcgcggcggg | ccagcgcgcc | 20568 |
| gggtcggccg | ggcgcgcgcg | cggcacgcgc | agctcggccc | accggtcgtc | cgggcgcgcg | 20628 |
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|-------------|-------------|-------------|-------------|-------------|-------------|-------|
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| cgcgccaccgg | gctccggcgg | caccgggcgg | gcgagttcgc | gctcgcgggc | gcgcagcgcg | 20868 |
| gcctcatcgc | cgggcggggc | cgccacgtgc | tctgtccaga | acggcatgcg | ggcggcgagc | 20928 |
| cgccgctcga | tgggcgcggg | gtcgatcggt | cgggccaggc | gcacggcaag | cgcgtaggcac | 20988 |
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| catgggctgc | gcctgcagga | aggtctgctc | gtgctcggcg | accggcacgt | cgagcgaccg | 21228 |
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| gccgtcgcg | accagcgcg | gcgctatctc | gtacgcgagg | acggcgccga | ggctgtgccc | 22368 |
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| ctggagcgcg | acgatcggcc | ggtccggccc | ggcgagctcg | gcccacgggt | ggaagaacga | 22548 |
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|-------------|------------|------------|-------------|-------------|-------------|-------|
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| tgatctcacc | ggtgatgtac | ggcgcccacc | gccaggtgtt | ggactcgccg | tgggtgcgc | 22788 |
| tgtcgggtcga | ggcgatcagc | agggcgctcc | cgtcgaagcg | gccagccgg | tggcggtgcgc | 22848 |
| gaatcttggg | gttggtgcgg | aagacggcgg | cgaaggccgc | cagttcgctg | cgggagaagc | 22908 |
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| tcggcaggag | cgtgccgagg | gagtcgccga | tcgacgacat | gctcagcgag | cccatcagct | 23388 |
| cagagaccgt | gggcgcggcc | atgatgtcct | gcaccgtgac | ggcgacaccg | cgtgccttga | 23448 |
| gccgctgcac | gagcgcgacg | gcgagcagcg | agtggccgcc | cagggcgaag | aagtcgtcgt | 23508 |
| cggggccgac | gctgtcgagg | ccgagcacct | cggcgaacgc | ctggcacatc | gactcctcga | 23568 |
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| cgacctgggt | gacgtcgggg | tgttgagcca | gaaccgcttc | aacctcgccc | ggctccaccc | 23868 |
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| cgtgcgtcaa | ctcatgccc | cggaccaggt | ccctcaggac | ggtggcgctg | atgctgcgcc | 24408 |
| gcggggccac | cacgaccgtg | ccgccattca | acaacggcac | ccagatttcg | tacgacgacg | 24468 |
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APPENDIX A

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| ccaggcccac | accgcgcgc | accagactcc | gcccagcac | atccgagcga | cgggtcaagct | 24888 |
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| cccgtcggc | gaacaacgcc | ggcaccgacg | actccaccac | cggacgagcc | gtgtcgttcc | 25008 |
| actccaccag | cagccgcgac | cgtccccc | gcccagcac | gtcgagctcg | ccgaccgcgg | 25068 |
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| ccacgagctc | gcacaccgcc | tccggccgca | ccggcgggat | cgcgttgacc | gccacgcca | 25188 |
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| agaccggg | gatgccctcg | gtcgggccc | ccgcgggcga | cgggtccgca | cccggcgacg | 25308 |
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APPENDIX A

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| ccgtgggcgt | ctggaagagc | gcgcgacccc | cgaccgtcac | gccgcggcgg | cgcagctgct | 26568 |
| ccaccagcga | gacggccagc | agggagtgcc | cgccgagcgc | gaagaagtcg | tcgtccacgc | 26628 |
| cgaccgaggg | caggccgagc | acctgggcga | agacctcgca | gagcacctcc | tcgcggtggg | 26688 |
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| cgagcttgcc | gttggccgtg | acgggcagct | cgtcgaggac | caccacggcc | gccggcacca | 26808 |
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| cggcgtcccc | gtcggccggc | acgacgtacg | cgaccaggcg | ggcgtcgccg | ggcgagtcgc | 26928 |
| tccgggcccag | caccaccgcc | cgggccacgc | cggcctggcg | cgccacgacg | gcctgcacct | 26988 |
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| ggtcgaggac | ccgcgagaac | gccgacggca | cgccgctgac | caggctggcc | tcccaggccg | 27528 |
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APPENDIX A

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| acttgccgc | ggccgatccg | gcggccggcg | ggacggcctg | gtcgccggcg | tccgcgcggc | 28548 |
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APPENDIX A

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APPENDIX A

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| cgtacagggt | ggtgacaccg | cgaccggccg | cggccatccg | gccggcgagc | gcgggcggca | 33828 |
| gcgcctcgcc | gccgacgagc | agccgcacgt | cgcggacggc | gtcggcggtc | ccggcgagca | 33888 |
| gcgcctgcca | cagcgccggg | gtggcctgca | cgatcgtcac | ggcgtgccgg | tcgaggagcg | 33948 |
| cggcgaccgc | ggccgggtcg | cgcaccacgg | cgtcctcggc | gacgaccact | ccggcgccgc | 34008 |
| cgaccagcgg | cacgtagagc | tccaggacgt | ggatgtcgaa | ggcgaccgtg | gtgaccgcga | 34068 |
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APPENDIX A

| | | | | | | |
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| cgtacgccgg | atgtgccggg | tgcgtgacgc | cgcgccgctc | cgagacgagc | aggtcgggtgc | 34248 |
| cggcgaggcc | gtcgagggcc | gccgcggtgt | ccggatcgcc | gaggacgata | cgttgccgcgc | 34308 |
| caccgtccgg | gaggctgtca | ccggaggcga | ccgcggggct | cgtgacgagc | agcgcggggc | 34368 |
| gggcgtcggc | gagcatgtag | gcgatccggc | cggccggata | tccgggatcg | atcggcaggt | 34428 |
| aggcggcccc | ggtcttcagc | acggccagca | gcgtgacgac | gaggtcggcc | gagcgttcca | 34488 |
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| ggttcgcgcg | ggcgttcagc | tgcgcgtacc | gcaggtgcgt | gtcgccgcac | cagacggcgc | 34608 |
| cggcctccgg | ttcggcgggc | gcacgcgcgt | cgatcagctc | gggcaccgcc | accgccggca | 34668 |
| cggccgcgct | cgtgtcgttc | cagccgggtga | ggaccagccg | ccgtctctcg | ccgtcgagca | 34728 |
| ggtccacgtc | gccgagccgg | gcgcggggat | cggcggggcag | cacggcgagc | agccgcgcga | 34788 |
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| ttcgggcgag | acccgcgggg | cggccgctcg | cgtcgtacgc | ctcgctcagg | ctcaggtcga | 34908 |
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| tgaaggcgtc | ccgatcgagc | gggcggtcga | ggttcgacgc | gaccgggatg | ttgtaggtcg | 35988 |
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APPENDIX A

| | | | | | | |
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| gggccaccac | accggccgga | gtccgcgcac | cgaagaccag | ccgagccgac | acctccaccc | 36168 |
| cgaacacctg | ccgaatacgg | cccaaccaacc | gcaccaccaa | cagcgaatgc | ccacccaaag | 36228 |
| cgaagaagtc | gtcgtcgaca | ccgacccgat | ccaggtcgag | cacctcgga | aacgcggcac | 36288 |
| acatcagctc | ttcacgcgcg | tgggcggggc | cccggcccgc | gccggactcc | acggacggcg | 36348 |
| cgggcagtcg | ggcccggtcg | accttctggt | tgtgtgtcag | cggcagcgcg | tccagatgga | 36408 |
| cgaaggccga | cgggaccagg | tagcccggaa | ggcgctcctg | cgcatacgcc | tgcacatcgc | 36468 |
| cgcgcagcag | gtaggcgacc | agccgcttat | cccctggggg | gtcctcccgg | acgaccactg | 36528 |
| ccacctgagc | cacgtccgga | tgcgcggcca | agacagcctc | gacctcgccc | ggctccaccc | 36588 |
| gatagccacg | aattcttcacc | tgatcatcgg | cccggcccgc | gaacaccagc | acaccgtcat | 36648 |
| cggctccaccg | caccagatca | cccgtgcggg | agaggcgacc | gccgctgctg | aacgggtcgg | 36708 |
| cgcgaaccg | ctcggccgtc | aaccggggca | tgcgcgcata | gccgcgcgcc | aagccggcac | 36768 |
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| catacacgcg | ggtgttgtcc | aacggccgcc | cgatcggcac | gcccgtgcca | tgcagcacct | 36888 |
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| gcacgtgcgt | caactcatgc | gcccggatca | gctcgcgcag | cacggcggca | tccatgctcc | 37128 |
| gccccggcgc | gaccacgacc | gtgccgccat | tcagcaacgg | caccagatc | tccatcagcg | 37188 |
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| cggtcgccag | atccaccagg | ttctggtggg | tggtcaccac | accttggggc | cggcccgtcg | 37308 |
| agccggagggt | gtacatccgg | tagacctccg | caccgggcaa | ggggcggggc | ggcaactcgg | 37368 |
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APPENDIX A

| | | | | | | |
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| cggtgatgcc | ggccgcgcgc | tgcgccagcg | cgagcggcgc | gtgctcgtgc | accagcagcc | 38148 |
| cgccagctg | gtcccgcagc | ccggtcaggg | cgtcgcgggt | gctgccggcg | gcgagccgca | 38208 |
| cgcgaccgg | gagcgtggtt | atgaacaagc | cctgcacgcg | gtcggcgggcg | gcgccggagt | 38268 |
| tcattccgcc | gaacaggacc | gtgccgaaga | cgacgtcgtc | ccggcccagc | acggcgccga | 38328 |
| gcacccgcgc | ccacgcgagg | tgggaagagcg | ccgccgggct | gacgccgagc | gaccgggcca | 38388 |
| gccggtggag | gcgcgcggcg | aggtcgtcgt | ccacctcgcg | ccggctgtgc | acggcgggcg | 38448 |
| aaccgtcgcc | gtgcacctcg | gtcaggccgt | acggcgcggt | ggtctcggtg | acgtcgccga | 38508 |
| gcaactccgc | gaagtaccgc | tctgtctcct | cgcgcggcac | accgagccgc | gcctgcgcca | 38568 |
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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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| gcccgcgaa | cacgacgggt | ccagcaccgc | caacaagccc | gcggtcacat | gcacgtgcgt | 54588 |
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APPENDIX A

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| caccgtctcc | tgctcgaaga | ggtcggccgc | gccgaggagc | gtggcggtga | tgccgtctcg | 55488 |
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| ccgcccagcg | ccggactcca | cggacggcgc | gggcagtgcg | gcccggtcga | ccttctggtt | 56988 |
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APPENDIX A

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| gaggcgacca | ccaaccgaga | acgggtcggc | gacgaaccgc | tcggccgtca | acccgggcat | 57348 |
| gcccgcatag | ccacgcgcca | agccggcccc | ggccacatac | agctcgccag | tcacaccgac | 57408 |
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| cctcaagacc | gtcgcgtcga | tgtgcgctg | cggagcgacc | acgaccgtgc | cgccattcaa | 57768 |
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| caactgctcg | accgggtcgt | ggccgcctgc | cagcgccacc | tcctcgacgg | gcaggacggc | 59448 |
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APPENDIX A

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APPENDIX A

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|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| ctgctcgteg | agggcggcga | tcaggctcgtc | gaggcaggcg | tgcaggagcc | ggcagagctg | 64908 |
| gtccgggtcg | gccggctcgg | tggcctcgac | gacgagctcg | aagccgagcg | ggctctgggt | 64968 |
| gaccgagacg | tcgagcggat | agttcgacgg | gtcgccgggtg | ggcagcgccct | cgacgcgcgtc | 65028 |
| gatgcccgtt | ccggagcgct | cgatgtcggt | cgcgttggtg | cggtagttga | acagcgaggt | 65088 |
| gaacaggggg | ctgccgcggg | gcaggccggc | cgactgctgc | gcgagcacca | gcggggcggtg | 65148 |
| ctcgtgggtg | agcaggtcgg | cgagctgggc | gcgcaccccg | tgcagcgccct | cgtcgacgggt | 65208 |
| gcggcccgccg | agggctacgc | gaaccggcag | ggtgttcacg | aaaaggcccg | gcacccgggtc | 65268 |
| ggcgcccggg | ccggcatcca | tccggcccag | cagcacgggtg | ccgaagacga | cgtcgtcgcg | 65328 |
| gcccagagacg | gcggcgagca | cgcgcgcccc | ggccagggtgg | aagagggtgg | cggggctgac | 65388 |
| gccccgggtcg | cgagcgggtct | ccgcaccccg | gccggcgagc | ccggcggaca | cggcgagccg | 65448 |
| gccccgggcg | acgcgggagt | gtcacccgtg | cacgtcggtg | aggccgtacg | gggcggtggt | 65508 |
| ctcggtgacg | tcgccgagca | ggccgggtgaa | gtagtcgcgg | tgcgcggccct | cggcggcacc | 65568 |
| acgccgcgag | cgcgccacga | aattgcggaa | cggtagcggc | ggggggagggt | ggtcgggttg | 65628 |
| gccggcgagg | atggtgcgga | tctcgtcgag | gacgatgtcg | agggcgggtgt | ggtcctgcac | 65688 |
| gaggtggtgc | atgcgcagta | gggcgagcca | gccgccgtcg | ggttcgggtg | cgatgtggac | 65748 |
| gctgagcagg | ggtgcgtggt | cgagcgggag | ccggccgcgg | gtggcggcgg | cgtgcagttg | 65808 |
| gtcgggggtg | acttcgggtga | cgggcagggt | ggcgtggcgg | tgcacgacct | ggacgggctc | 65868 |
| gcgcaggttc | tgccaggcga | tggccgtgcg | gtagacgtcg | tggcgggtcca | ccacctgctg | 65928 |
| caaagccccc | aggaaggcgt | cgagctgctc | acgcgtgcca | acgcgcagca | ggtacggcag | 65988 |
| cgcgtagacg | tcggcgggtgt | cgccctcggt | catgagggtg | tggagaaga | tgcctctctg | 66048 |
| cagcggggct | agggggtaga | tgtcggcgat | gttggcagcg | ccgccgggca | ccgcggccac | 66108 |
| gatggtggcc | agctcctcgc | cggtcaggtc | gaccaggggc | agcatgtcgg | gggtcagttc | 66168 |
| ccgggcgcgc | ccctggggga | tgaggttggg | cggcacctcg | atcggggccg | ccacggtcga | 66228 |
| gacggccagc | gccgcggggg | tcggcgtggc | gaagagcgcg | cgaacggaga | cgtgcaggcc | 66288 |
| acgtcgccgc | aaatcctcca | caagggagac | ggcaagcagc | gagtgaccgc | cgagagcgaa | 66348 |
| gaagtcgtcg | tcgacaccga | cccgatccag | gccgagcacc | tcggcgaacg | cggcacacac | 66408 |
| caactcctcg | cgggcatccg | cgggagctcg | accggcgccg | gactccatgg | acggcgcggg | 66468 |
| cagtgcggcc | cgatccacct | tctggttgct | ggtcagcggc | aacgcaccca | gatgtacgaa | 66528 |
| tgccgacggg | accatgtaac | cgggaaggcg | ctcctggcca | tacgcctcga | tgtcaccgcc | 66588 |
| gacgacatac | gcgacaagac | gcttgctgcc | tgggggtgtc | tcccggacga | ccaccgcgac | 66648 |
| ctgggtgaca | tcgggatggt | gagccagaac | cgtttcaacc | tcgcccgggt | ccacccgata | 66708 |
| gccgcgggac | ttcacctgat | catcggtcg | gccggcgaaa | tgcagcacac | cgtcatcggt | 66768 |

APPENDIX A

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|-------------|-------------|-------------|-------------|-------------|-------------|------------|-------|
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| aaatcgctcg | gccgtcaacc | cg | ggcatgcc | cgcatagcc | cgcgccacgc | cggcaccggc | 66888 |
| cacatacagc | tgcgcggtca | caccgaccgg | caccggctgc | agcaagtcgt | ccaggacata | | 66948 |
| cacgcgggtg | ttgtccaacg | gccgcccgat | cggcacc | tcattccagca | gatgctgcgt | | 67008 |
| cgcgcacagc | gtcacctcgg | tgcggcgcta | cagctgcgc | acccgcagac | cggggttcgc | | 67068 |
| gtctttgacc | cggcgccaccg | cctccgcga | caccgcacgc | ccaccctga | gcacctcgg | | 67128 |
| caggcccgcg | aagcacgacg | ggtcacgac | cgcagcagg | cccgcggtga | cgtgcacgtg | | 67188 |
| cgtcaaatca | tgcgcgcgga | tcagatcctt | caggacgggtg | gcgtcgatgc | tgcgctgcgg | | 67248 |
| ggcgaccacg | accgtgcgc | cattcaacag | aggcaccag | atttcgtacg | acgacgcgtc | | 67308 |
| gaaggcgtgc | ggggcggtga | acagcacc | cggggtcgga | ccccaacacg | tgtcggtcgc | | 67368 |
| cagatccacc | aggttctggt | gggtgggtcac | cacacccttg | gggcggcccg | tcgagccgga | | 67428 |
| ggtgtacatc | cggtagaccg | ccgcacc | caccgggcga | gacggcaaca | caacggcccg | | 67488 |
| atccgcggtc | aggtcggcg | acacgacggc | cgaatcccg | cccaggccgg | cggacacgac | | 67548 |
| cgtcagcccg | ctcatcgcc | ggtcagccac | cgccaccgc | gcggcacagt | cagcaaccac | | 67608 |
| cgcacgcaca | cgcgcctgcg | gccacgaca | atccaccgga | acaaacacac | caccggcctt | | 67668 |
| cgccaccgcc | aaaaacgcgg | acagcacctc | cggcgaccgc | tccaacgcca | ccaccaccgg | | 67728 |
| cgaactccaca | cccacacc | ccgccaccag | acgcgcgcgc | agcacatccg | agcgacgac | | 67788 |
| gagttcgga | taggaccacg | acacaccctc | gcccaccacc | gccgtcgcgt | ccggcggtggc | | 67848 |
| cgccaccgc | ttcggaaca | acgcgggcac | cgaagactcc | accaccggac | gagccgtgtc | | 67908 |
| gttccactcc | accagcagcc | gcgaccgctc | ccccggcgac | agcacctcga | tgcgggagag | | 67968 |
| ccgcgcgtcc | ggggcctcgg | ccatcgcggt | cagcaccgc | accagcccg | cggccatccg | | 68028 |
| gccggcgctc | gcctcgtcga | acaggtcggc | cgaagcgtc | aggattccgc | ggatgcgggc | | 68088 |
| cggcgcgccg | tccgcgcgc | gtacctctcc | ggtcacac | tcgacgtcga | acttggcacc | | 68148 |
| ggagcggccg | atggtgagcg | gctcgctcg | caccgcgtcc | aggtcgacgc | gcgtcccgtc | | 68208 |
| gtcgagcggc | gcgaccatga | cctggaacag | cgggtgcgc | ccgagcacgc | gggcggcg | | 68268 |
| cagccgctcg | acgagtttgt | cgaagggcac | gtcctggctg | gccaggggcg | ccaccgcgc | | 68328 |
| tccgcgcacc | cggcccagcg | cgtcgccac | cgtggggctg | ccggacaggt | cggcgcgctac | | 68388 |
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| gaccgggatg | cagagcggga | cgtcgcgcc | ggcgccgagc | ttggacagca | ggatcgcgac | | 68508 |
| gccggtctgc | acgaccattt | gaagcgtggc | ggggcgccgc | cgggccagcg | tggccagtc | | 68568 |
| tcgggtgcacg | gccgggggca | ggctcagcgc | cttgggtgtg | ccgcctgccc | cgggttcggc | | 68628 |
| gggcgcggga | cggtcggccg | gcagatccag | ctcgaccggc | atgcgggcca | gccgctcctg | | 68688 |

APPENDIX A

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|------------|-------------|------------|-------------|-------------|-------------|-------|
| ccagtgggcg | agctgccgcg | agatgacgct | gtcgggggtcg | tcctcgggcgc | cgagcagttc | 68748 |
| ctgctgccag | gccgcgtagt | cggcgtagct | caccggaagg | ggtgccact | ggggcgccgt | 68808 |
| tccggtgcgg | cgggcgcggt | aggcggcggc | gaggtcgcg | gcgaacggcc | cgccggagct | 68868 |
| gccgtcggtg | gcgatgtggt | ggagcacgac | gacgaggacg | tggtgccgcg | ggcccagggc | 68928 |
| gaacagccgc | gcccgcaccg | ggatctcgat | ggagagggtcg | aaggggtggg | ccgccacccg | 68988 |
| ggcgatcgcg | cggggcagct | cgtcgacggt | gatctcgccg | tcgggttccc | ggccggccgg | 69048 |
| tgcgggagac | ggcaggtcga | gaaccgggcg | gtcccagggc | agctcgtcga | gcgtgacgag | 69108 |
| cgggtcgctg | cccgcgccgg | caccggacac | cggggtcggt | ggcagctccc | acaccatgtc | 69168 |
| gtccgggcca | accacgcgct | gccgcggctc | gccgccgacg | tcgggataga | ccgtgcgcag | 69228 |
| gacctcgctc | cgttcgagga | cgtcgcgacg | cgcgtgctcc | agggcgggcg | tgtcgagctc | 69288 |
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| gccgccagct | cggcggggggt | gggcgtggcg | aagagctcct | cgatgggcag | ttcctcaccg | 69528 |
| agcacgaggg | gtaccgggct | caccaggctg | gtggcgagca | gggaatggcc | gccgaggctg | 69588 |
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| ggctcgggca | ggggcgcgcg | gtcgaccttg | cgtttcacgg | tcagcgggat | ctcgtcgagg | 69768 |
| gtcacgacgg | cggccgggac | catgtattcg | ggcaggcgct | cggcgacgtg | ggcgcgtaac | 69828 |
| gactccgcca | accgggcccgg | ctcacgggca | gcgaccacat | aggccaccaa | ctgccgctca | 69888 |
| cccaccgcat | cgggcccgagc | caccaccgcc | gcacccgcta | cccgcggatg | ccccgccacc | 69948 |
| accaaccgca | cctcatccgg | ctccaccgga | taaccacgaa | ttttcacctg | ctcatcgacc | 70008 |
| cggcccacaa | acaccagatc | accaccggcc | aacgcacca | catcaccctg | gcgatacatc | 70068 |
| cgtcaccca | caccgaacgg | acacgccaca | aaacgcgaag | cgtcaaacc | agaacgaccc | 70128 |
| acataacccc | gcgccacctg | cgaaccagcc | acatacaact | caccgcgcac | cccagccgga | 70188 |
| accggccgca | aacctcatc | caaaacaaac | aaacgcgtat | tcgccaccgg | cgggccaacc | 70248 |
| ggcaccacat | caccaaccac | atcaccgcg | gccaccgaga | aaaccgaaca | acccaccacg | 70308 |
| gtctcgtcg | gcccgtactc | attcaccacc | accgaaccgg | gcaccgcgga | caaccactca | 70368 |
| cgcacatcac | caccggccaa | aacctcacca | cgggcaccca | acgaaccac | cgcgcgcac | 70428 |
| tcaccgcgg | gcaccaactc | cggcagcaaa | cgcaaatgac | cgggcaccac | cttcaccaac | 70488 |
| gaaaaaccat | caccagccgc | caacaacgac | gcaaaacccc | gaccaccacc | ggccgcgcgac | 70548 |
| accaccaccg | aaccaccaca | caccaacggc | acaaaaacac | tcgtcacctg | caaatcaaaa | 70608 |

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|-------------|-------------|-------------|-------------|-------------|-------------|-------|
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| taattcgcca | accacccatg | cgaaacacgg | acacccttgc | tcaaccccggt | cgaacccgac | 70728 |
| gtataaatca | catacgccaa | ctgatccggc | aagggctcga | gccgcagggg | cgagggcgat | 70788 |
| tcccggggcga | tctccgggtgc | gtggacgtcg | acgtcggcgg | cgggggccgtc | cgggaggggcg | 70848 |
| gcgagcgtct | cggcgggtgcc | gaggcgggacg | gcggcgggcgc | tgctgcgcgag | cagataggcg | 70908 |
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| gcgaggatgc | cggtcacgac | ctcggggccg | cggggcaggc | agagggccac | gaccgactcc | 71028 |
| ggtccgggcgc | cgcgcgcgcg | aaggacgcgg | gcgagccgggt | tggcgccggc | ctccagctcg | 71088 |
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| tgctcctcga | aacgcgcgag | gacgggtgtcg | ctcgacggcg | ccgcgggtggc | gttcactctg | 71208 |
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| agatcggggg | cgcactcgcc | gtcgatctcg | acgaactcgc | cgacctgata | gacggggctg | 72468 |
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|---|-------------|------------|-------------|-------------|-------------|-------|
| tcaggggtgg | gcacgacggt | cacctccggc | ttatcggttg | acgcggtcgg | cgaggtgggc | 72588 |
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| tttgccgcgc | cggccgtacc | gaggccgcac | tccctcccgc | ccgatcgtgc | ccgctccggg | 73188 |
| cgcacccgcc | atcaggatgg | agaggttcac | | | | |
| atg ggc aac gcc gat cag ccg aga tac ctg cgc | 73251 | | | | | |
| Met Gly Asn Ala Asp Gln Pro Arg Tyr Leu Arg | | | | | | |
| 1 5 10 | | | | | | |
| tcc aac gtc atc gcc gaa ccg ctc gtc gac cgt ttc tac gcg tgg ctg | 73299 | | | | | |
| Ser Asn Val Ile Ala Glu Pro Leu Val Asp Arg Phe Tyr Ala Trp Leu | | | | | | |
| 15 20 25 | | | | | | |
| cac acg gtg gca ccg gtg ccg gcc tcc atg aac ctg gcg ttc ctg cag | 73347 | | | | | |
| His Thr Val Ala Pro Val Pro Ala Ser Met Asn Leu Ala Phe Leu Gln | | | | | | |
| 30 35 40 | | | | | | |
| gtg cct ctg ctc gag tcg tac ctg cag tcg ccg ccg gtg cac gtg gcg | 73395 | | | | | |
| Val Pro Leu Leu Glu Ser Tyr Leu Gln Ser Pro Pro Val His Val Ala | | | | | | |
| 45 50 55 | | | | | | |
| gcg agc acg aac ccg aag atg cgc gcc gcc tac ttc gtc gcc gtc gag | 73443 | | | | | |
| Ala Ser Thr Asn Pro Lys Met Arg Gly Gly Tyr Phe Val Ala Val Glu | | | | | | |
| 60 65 70 75 | | | | | | |
| gaa tcc cgc agc gac gag gtc gcc gag ctg ctc aag acg atc aag aac | 73491 | | | | | |
| Glu Ser Arg Ser Asp Glu Val Ala Glu Leu Leu Lys Thr Ile Lys Asn | | | | | | |
| 80 85 90 | | | | | | |
| gag ccg gcc gac atg ctc gcc ttc gcc gcc gcg gtg gcc gag gcc gag | 73539 | | | | | |
| Glu Arg Ala Asp Met Leu Gly Phe Ala Ala Ala Val Ala Glu Ala Glu | | | | | | |
| 95 100 105 | | | | | | |
| gac ctg atc cgc gag aac gcg gtc gcc tac gac ctg acg ccg ctc tac | 73587 | | | | | |
| Asp Leu Ile Arg Glu Asn Ala Val Gly Tyr Asp Leu Thr Pro Leu Tyr | | | | | | |
| 110 115 120 | | | | | | |
| ccc ccg ctg ccg gcc gcg ctc aac ggg ctg gtg gag atc gcg tac gac | 73635 | | | | | |
| Pro Arg Leu Pro Ala Ala Leu Asn Gly Leu Val Glu Ile Ala Tyr Asp | | | | | | |
| 125 130 135 | | | | | | |
| acc agc aac cag ccc tcg ctg cac ttc ctc gag ccg ctg ctc tac cgc | 73683 | | | | | |
| Thr Ser Asn Gln Pro Ser Leu His Phe Leu Glu Pro Leu Leu Tyr Arg | | | | | | |
| 140 145 150 155 | | | | | | |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| agc | ccg | gcc | tac | gac | gag | cgg | cgg | cag | tcg | gtg | cag | ctc | tcg | ctc | gac | 73731 |
| Ser | Pro | Ala | Tyr | Asp | Glu | Arg | Arg | Gln | Ser | Val | Gln | Leu | Ser | Leu | Asp | |
| | | | | 160 | | | | | 165 | | | | | 170 | | |
| gac | ggg | gtg | gag | cgc | ccg | ttc | atc | ctc | agc | aca | ccg | cgg | ctt | ccc | cgg | 73779 |
| Asp | Gly | Val | Glu | Arg | Pro | Phe | Ile | Leu | Ser | Thr | Pro | Arg | Leu | Pro | Arg | |
| | | | 175 | | | | | 180 | | | | | 185 | | | |
| gct | ggc | gtg | ctc | gac | ctt | ccg | ctg | ccc | ctg | cgg | cat | ccc | ggg | ctg | acc | 73827 |
| Ala | Gly | Val | Leu | Asp | Leu | Pro | Leu | Pro | Leu | Arg | His | Pro | Gly | Leu | Thr | |
| | | 190 | | | | | 195 | | | | | 200 | | | | |
| gag | ctc | ttc | gac | gcc | cgc | gtg | cgg | ccc | acc | tcg | ctc | aac | cgc | ctg | cgc | 73875 |
| Glu | Leu | Phe | Asp | Ala | Arg | Val | Arg | Pro | Thr | Ser | Leu | Asn | Arg | Leu | Arg | |
| | 205 | | | | | 210 | | | | | 215 | | | | | |
| gag | gcg | ctg | gag | ctc | gac | gac | gcc | ggc | gcg | gcc | gcg | ctg | gat | gcc | ctg | 73923 |
| Glu | Ala | Leu | Glu | Leu | Asp | Asp | Ala | Gly | Ala | Ala | Ala | Leu | Asp | Ala | Leu | |
| 220 | | | | | 225 | | | | 230 | | | | | | 235 | |
| ctc | acc | gac | gag | ccg | agc | ctg | tcg | ccc | gac | cgg | cac | atc | gag | tcc | ggc | 73971 |
| Leu | Thr | Asp | Glu | Pro | Ser | Leu | Ser | Pro | Asp | Arg | His | Ile | Glu | Ser | Gly | |
| | | | | 240 | | | | | 245 | | | | | 250 | | |
| ggc | cgg | gtc | cgc | tac | tac | ggt | cac | gcc | tgc | gtg | gtg | atg | cag | acc | gag | 74019 |
| Gly | Arg | Val | Arg | Tyr | Tyr | Gly | His | Ala | Cys | Val | Val | Met | Gln | Thr | Glu | |
| | | | 255 | | | | | 260 | | | | | 265 | | | |
| cag | gcg | gcg | gtg | gtc | acc | gac | ccg | ttc | atc | agc | acc | gac | aac | cgc | cac | 74067 |
| Gln | Ala | Ala | Val | Val | Thr | Asp | Pro | Phe | Ile | Ser | Thr | Asp | Asn | Arg | His | |
| | | 270 | | | | | 275 | | | | | 280 | | | | |
| ggc | gac | cgg | tac | acg | ctc | gac | gac | ctg | ccc | gac | cac | atc | gac | ctg | gtg | 74115 |
| Gly | Asp | Arg | Tyr | Thr | Leu | Asp | Asp | Leu | Pro | Asp | His | Ile | Asp | Leu | Val | |
| | 285 | | | | | 290 | | | | 295 | | | | | | |
| ctc | atc | acg | cac | ggg | cac | cag | gac | cac | atc | gtg | ctc | gag | acc | ctg | ctg | 74163 |
| Leu | Ile | Thr | His | Gly | His | Gln | Asp | His | Ile | Val | Leu | Glu | Thr | Leu | Leu | |
| 300 | | | | 305 | | | | | | 310 | | | | | 315 | |
| cag | ctg | cgc | ggc | cgg | atc | ggc | acc | gtt | gtc | gtg | ccg | cgc | acc | agc | cgc | 74211 |
| Gln | Leu | Arg | Gly | Arg | Ile | Gly | Thr | Val | Val | Val | Pro | Arg | Thr | Ser | Arg | |
| | | | | 320 | | | | | 325 | | | | | 330 | | |
| ggc | aac | ctc | ccg | gac | ccg | tcg | atc | gcg | ctg | tac | ctg | cgc | cgg | atc | ggt | 74259 |
| Gly | Asn | Leu | Pro | Asp | Pro | Ser | Ile | Ala | Leu | Tyr | Leu | Arg | Arg | Ile | Gly | |
| | | | 335 | | | | | 340 | | | | 345 | | | | |
| ttc | acc | gtc | gtc | gag | gtc | gag | gag | ttc | gac | gag | gtg | ccg | ttc | ccg | ggc | 74307 |
| Phe | Thr | Val | Val | Glu | Val | Glu | Glu | Phe | Asp | Glu | Val | Pro | Phe | Pro | Gly | |
| | | 350 | | | | | 355 | | | | | 360 | | | | |
| ggc | acg | gtc | acc | gcc | acg | ccg | ttc | ctg | ggc | gag | cac | gcc | gat | ctg | gac | 74355 |
| Gly | Thr | Val | Thr | Ala | Thr | Pro | Phe | Leu | Gly | Glu | His | Ala | Asp | Leu | Asp | |
| | 365 | | | | | 370 | | | | | 375 | | | | | |
| atc | cgc | ggg | aag | tcg | acg | tac | ttc | gtg | cgg | atg | gcc | ggg | cgc | acc | atc | 74403 |
| Ile | Arg | Gly | Lys | Ser | Thr | Tyr | Phe | Val | Arg | Met | Ala | Gly | Arg | Thr | Ile | |
| 380 | | | | | 385 | | | | 390 | | | | | | 395 | |
| ttc | atc | ggc | gcc | gac | tcg | tcg | ggc | atc | gac | ccg | gtg | ctc | tac | cgc | tac | 74451 |
| Phe | Ile | Gly | Ala | Asp | Ser | Ser | Gly | Ile | Asp | Pro | Val | Leu | Tyr | Arg | Tyr | |
| | | | | 400 | | | | | 405 | | | | | 410 | | |

APPENDIX A

atc cgc gac cac gtc ggc cag gtc gac atg gcg ttc ctc ggc atg gag 74499
Ile Arg Asp His Val Gly Gln Val Asp Met Ala Phe Leu Gly Met Glu
415 420 425

tgc gac ggc gcg ccg ctc aac tgg ctc tac aag gga ctg ctg acc aag 74547
Cys Asp Gly Ala Pro Leu Asn Trp Leu Tyr Lys Gly Leu Leu Thr Lys
430 435 440

ccg gtc aac aag aag atg agc gcc tca cgg cgg ctg tcc gga tcc aac 74595
Pro Val Asn Lys Lys Met Ser Ala Ser Arg Arg Leu Ser Gly Ser Asn
445 450 455

gcg gag cag gcc ggc gcg atc atg acc gag ctc ggc gcc acc gcc gga 74643
Ala Glu Gln Ala Gly Ala Ile Met Thr Glu Leu Gly Ala Thr Ala Gly
460 465 470 475

tac atc tac gcc atg ggc gag gag tcc tgg cag ggc cac gtc atg gcg 74691
Tyr Ile Tyr Ala Met Gly Glu Glu Ser Trp Gln Gly His Val Met Ala
480 485 490

acg acc tac aac gag gac acc tac cag ctc aag cag atc gac gag ttc 74739
Thr Thr Tyr Asn Glu Asp Thr Tyr Gln Leu Lys Gln Ile Asp Glu Phe
495 500 505

ctc gcg tgg tgc gcg gac cgg ggc ttc acc gcc gag cac ctg ttc aac 74787
Leu Ala Trp Cys Ala Asp Arg Gly Phe Thr Ala Glu His Leu Phe Asn
510 515 520

aag cgc gag tgg cgc tgg
Lys Arg Glu Trp Arg Trp
525

tga gcgccgcggg 74818

ctccggtttc gtcaccacca acgggggtccg cctggcgtat cgccgctccg gagccggcga 74878

gcccggttctc atgatcatgg gatcgggctc ggccggccag acctggacgg tgcaccagac 74938

gcccgcggttg cacgaggcgg gatattccac cgtcgtcttc gacagccgtg gcatcccgcc 74998

ctcggaagtg cccgcgggca agtactccct cgccgacatg accgcccaca cccgcggtct 75058

catcgaggcc ctgatctcg cgccctgccg gatcgctggc acctcgctgg gcgcatgat 75118

cgcccaggag ctggcgtcg accatccgga gctggtgcgc tgcgcggtcc tgatcgcgac 75178

cctggcccgg cccgacgcgg cccgcgggc gcagaaccag gccgacatcg acctgctgga 75238

gagcggggtc acgtgcccg ccgcgtacga ggccgcgacc gcggtcttca agatgttctc 75298

ccgggcgacg ctcaacgacg acgtggccgt gcgcgagtgg ctcgacatct tcgagctctc 75358

cggcacgggc gtctcgccg gcgggcaggc ctgggcccag ctgaccggtg accggcgcgc 75418

cgccctgcgc tcggtcaccg cgccctgccg ggtgatctcg ttgcgcgacg acctcatcac 75478

gccgcgcac ctggccgcgg aggtggccga ggcgatcccc gactgcgacc tggctgagat 75538

atcccgtgc gggcacctcg gctatctgga acggccggac gcggtgaacg ccgcgatcct 75598

cgagttcctc gactccact agggacgcgc cggcacgacc ggccgacccg ctaccgcgag 75658

agagaaggtt cc

APPENDIX A

| |
|---|
| gtg gca acc atc gac ggc ccg gat ctg ggc gtc atc ggg Val Ala Thr Ile Asp Gly Pro Asp Leu Gly Val Ile Gly 1 5 10 75709 |
| ctg cgc gtc gac ggc ctc ata ccg atg cag aag gtc agg ccc ggc acg Leu Arg Val Asp Gly Leu Ile Pro Met Gln Lys Val Arg Pro Gly Thr 15 20 25 75757 |
| gtg cgg cgc atc ctc ccg tac gcg aag aaa cac cgc tgg tcc ctg gcc Val Arg Arg Ile Leu Pro Tyr Ala Lys Lys His Arg Trp Ser Leu Ala 30 35 40 45 75805 |
| gtc gcc ctg ctg atg acc gtg gtc gac gcc gcg ctc acg gtc gcc aac Val Ala Leu Leu Met Thr Val Val Asp Ala Ala Leu Thr Val Ala Asn 50 55 60 75853 |
| ccg ctg ctg ctc aag cag atc atc gac cgc ggc atc gtg gcc ggc cgc Pro Leu Leu Leu Lys Gln Ile Ile Asp Arg Gly Ile Val Ala Gly Arg 65 70 75 75901 |
| ctg gac gtg gtg gtc ggc ctg tcg ctg gtg gtg gcc ggc ctc gcc ctg Leu Asp Val Val Val Gly Leu Ser Leu Val Val Ala Gly Leu Ala Leu 80 85 90 75949 |
| gtc aac gtg gcg gcg atc cac gtg cag acg ctg gcc tcc ggg cgc gtc Val Asn Val Ala Ala Ile His Val Gln Thr Leu Ala Ser Gly Arg Val 95 100 105 75997 |
| ggg cag ggt ctc atc tac gac ctg cgc acc aag gtg ttc gcc cac gtc Gly Gln Gly Leu Ile Tyr Asp Leu Arg Thr Lys Val Phe Ala His Val 110 115 120 125 76045 |
| atg cgc cag ccg ctg gcg ttc ttc acc ccg gcg cag acg ggg tcg ctg Met Arg Gln Pro Leu Ala Phe Phe Thr Arg Ala Gln Thr Gly Ser Leu 130 135 140 76093 |
| gtg agc cgg ctc aac acc gac gtg gtc ggc gcc gag cag gcc atg acc Val Ser Arg Leu Asn Thr Asp Val Val Gly Ala Glu Gln Ala Met Thr 145 150 155 76141 |
| tcg atg atc acg cag acg gtc tcc acg gtc ctg acc gtc gtg ctg gtc Ser Met Ile Thr Gln Thr Val Ser Thr Val Leu Thr Val Val Leu Val 160 165 170 76189 |
| atc ggc gcg atg ttc tac ctc tcc tgg gcg atc gcg ctg gtg gcg ctg Ile Gly Ala Met Phe Tyr Leu Ser Trp Ala Ile Ala Leu Val Ala Leu 175 180 185 76237 |
| gtg ctc atc ccg ctg ttc ttc ctg ccc ggc aag ctc atc gcg ggc ccg Val Leu Ile Pro Leu Phe Phe Leu Pro Gly Lys Leu Ile Ala Gly Arg 190 195 200 205 76285 |
| ctg gag cgg ctg gcc cgc ggc ggc atg cag gtc gac gcg gag ctg ggc Leu Glu Arg Leu Ala Arg Gly Gly Met Gln Val Asp Ala Glu Leu Gly 210 215 220 76333 |
| tcg atg atg aac gag ccg ttc aac gtc tcc ggc gcc atg ctg gtc aag Ser Met Met Asn Glu Arg Phe Asn Val Ser Gly Ala Met Leu Val Lys 225 230 235 76381 |
| ctc tac ggc ccg ccg gag agc gag gag acc gcc ttc gcc ggg ccg gcc Leu Tyr Gly Arg Pro Glu Ser Glu Glu Thr Ala Phe Ala Gly Arg Ala 240 245 250 76429 |

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|---|-------|
| gcg cgg gtg cgt gac atc gcc atc tcg atg ggc gtg cac gca cgg ctg Ala Arg Val Arg Asp Ile Ala Ile Ser Met Gly Val His Ala Arg Leu 255 260 265 | 76477 |
| ctg ttc atc atc gcc acg ctg ctg acc acg gtg acc acg gcc atg gtc Leu Phe Ile Ile Ala Thr Leu Leu Thr Thr Val Thr Thr Ala Met Val 270 275 280 285 | 76525 |
| tac ggc ttc ggc ggc gcc ctg gtc atc gac ggc acg ctc ggc atc ggc Tyr Gly Phe Gly Gly Ala Leu Val Ile Asp Gly Thr Leu Gly Ile Gly 290 295 300 | 76573 |
| acc ctt gtc gcc atg gtc gcc ctg ctg gcg cag ctg tac ggc ccg gtg Thr Leu Val Ala Met Val Ala Leu Leu Ala Gln Leu Tyr Gly Pro Val 305 310 315 | 76621 |
| aac cag ctc acc aac atc cag gtg gac gtc gtc acc gcg ctg gtg agc Asn Gln Leu Thr Asn Ile Gln Val Asp Val Val Thr Ala Leu Val Ser 320 325 330 | 76669 |
| ttc gac cgg gtc ttc gag gtg ctc gac ctc gac ccg ctc gtc aag gag Phe Asp Arg Val Phe Glu Val Leu Asp Leu Asp Pro Leu Val Lys Glu 335 340 345 | 76717 |
| cgc ccg ggc gcc cgc gcc ctg ccg gcc gcc gag ccg ggc cgc tcg gcg Arg Pro Gly Ala Arg Ala Leu Pro Ala Ala Glu Pro Gly Arg Ser Ala 350 355 360 365 | 76765 |
| gcg ccg gac atc gag ttc gac aac gtc gtg ttc cgc tat ccg ggc gcg Ala Pro Asp Ile Glu Phe Asp Asn Val Val Phe Arg Tyr Pro Gly Ala 370 375 380 | 76813 |
| gac gag gtc tcg ctg gcc tcg ttg gag acc gtg gcc cag cgg tcc tcc Asp Glu Val Ser Leu Ala Ser Leu Glu Thr Val Ala Gln Arg Ser Ser 385 390 395 | 76861 |
| gac ggc acc gcg gag cgg ccg gtg ctc aac ggg atc agc ttt ctc gcc Asp Gly Thr Ala Glu Arg Pro Val Leu Asn Gly Ile Ser Phe Leu Ala 400 405 410 | 76909 |
| ccg gcc ggc aag ctc acc gcc ctg gtc ggc ccg tcg ggc gcc ggc aag Pro Ala Gly Lys Leu Thr Ala Leu Val Gly Pro Ser Gly Ala Gly Lys 415 420 425 | 76957 |
| acc acg atc acc cac ctg gtg ccg cgc ctc tac gac acc acc tcg ggc Thr Thr Ile Thr His Leu Val Pro Arg Leu Tyr Asp Thr Thr Ser Gly 430 435 440 445 | 77005 |
| acg gtc cgg atc gcc ggc cac gac gtc cgc gac ctc acc ctg cgc tcg Thr Val Arg Ile Ala Gly His Asp Val Arg Asp Leu Thr Leu Arg Ser 450 455 460 | 77053 |
| ctg agc gag tcc atc ggc gtg gtc acg cag gac gcg cac ctg ttc cac Leu Ser Glu Ser Ile Gly Val Val Thr Gln Asp Ala His Leu Phe His 465 470 475 | 77101 |
| gac acc atc cgg gcc aac ctg ctc tac ggc cgt ccc gac gcc ggc gag Asp Thr Ile Arg Ala Asn Leu Leu Tyr Gly Arg Pro Asp Ala Gly Glu 480 485 490 | 77149 |
| cgc gac ctc gtc gcg gcc tgc gag gcg gcc cgc atc tgg gag atg gtg Arg Asp Leu Val Ala Ala Cys Glu Ala Ala Arg Ile Trp Glu Met Val 495 500 505 | 77197 |

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| | |
|---|-------|
| tcc tgc ctg ccc gac ggg ctg gac acg gtg gtc ggc gat cgc ggc tac | 77245 |
| Ser Ser Leu Pro Asp Gly Leu Asp Thr Val Val Gly Asp Arg Gly Tyr | |
| 510 515 520 525 | |
| cgg ctc tgc ggc ggc gag aag cag cgc ctc gcc ctg gcc cgc ctg ctg | 77293 |
| Arg Leu Ser Gly Gly Glu Lys Gln Arg Leu Ala Leu Ala Arg Leu Leu | |
| 530 535 540 | |
| ctc aaa tgc ccc ccg gtg gtg gtg ctc gac gag gcc acc gcc cat ctg | 77341 |
| Leu Lys Ser Pro Pro Val Val Val Leu Asp Glu Ala Thr Ala His Leu | |
| 545 550 555 | |
| gac tcc gaa tgc gag gcg gcg atc cag cgg gcc ctg gac acg gcg ctc | 77389 |
| Asp Ser Glu Ser Glu Ala Ala Ile Gln Arg Ala Leu Asp Thr Ala Leu | |
| 560 565 570 | |
| gcc ggg cgt acg tgc ctc gtc atc gcc cac cgg ctc gcc acg atc ctg | 77437 |
| Ala Gly Arg Thr Ser Leu Val Ile Ala His Arg Leu Ala Thr Ile Leu | |
| 575 580 585 | |
| gac gcc gac cag atc ctc gtc atc gac gac gcc cgc gtc gtc gag cgc | 77485 |
| Asp Ala Asp Gln Ile Leu Val Ile Asp Asp Gly Arg Val Val Glu Arg | |
| 590 595 600 605 | |
| ggc acc cac gac gag ctg atc gcg cac ggt gcc ctg tac gcc gag ctg | 77533 |
| Gly Thr His Asp Glu Leu Ile Ala His Gly Gly Leu Tyr Ala Glu Leu | |
| 610 615 620 | |
| tac cgg acc cag ttc gcc ggc cag cgc acc gag gag cgc cag ccg gcc | 77581 |
| Tyr Arg Thr Gln Phe Ala Gly Gln Arg Thr Glu Glu Arg Gln Pro Ala | |
| 625 630 635 | |
| gtg ccg tcc | |
| Val Pro Ser | |
| 640 | |
| tga | 77593 |
| gatgtccctg gaggacgacg ttgcggcggc cgggtattcc cggccgcgcg agtcgtatgg | 77653 |
| accgcctcta cggcgcgacc gggcccgcca ggtccgcgcc ggcgtccgcg ggcgaggcca | 77713 |
| cgcgcccgag ggccatgtcg tcggtcagct ccccgcgag gatgtcgagc acgtgccgca | 77773 |
| cgcgggcgt gccgcgacc gcgaggccgt acagcacggg gcggcctacc aggaccgcgt | 77833 |
| cggcgccgag ggccagcgac agcaggacgt cgcggccgcg ccgcacgccg ccgtcgagca | 77893 |
| ggaccgggca gcgccgggc accggcgcca ccacctggg cagcacgtcg agcgtcgccg | 77953 |
| gcacgcgctc gagctgcggg ccgcggtggt tggagacgac gatcccgctc gcacccgcgt | 78013 |
| cgagcgcccg cggggcaccg tcggcggtca gcacgccctt gagcagcacc ggcagcccg | 78073 |
| tgagctcccg cagccaggca acgacggtcc agtccatcgc ggcgtcgaac gcgccgagcg | 78133 |
| cgtgcccgct gggcgacgcg aagccgctgc cggtagaggtt tgccggcgcc accccggg | 78193 |
| gcaggcgga gtcgttgccg atgtcccgca ggcggcgcc cagccgcggc gcgtcgacgg | 78253 |
| tgagcaccag cgcctcgaag ccggcgcgga cggccctcgt gacgagcgcg gcggtgaccg | 78313 |
| cccggtcgcg gaagcaatag acctgcaacc agcgcggcgc ggtggtggcc gcggcgatgt | 78373 |

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|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| cctccacggt | ccgcccggag | aacgtgctca | ccacgagcgg | cagcccggcc | gcgcccggcg | 78433 |
| ccgcccgggt | ggcgacctcg | cccgcgggt | cgacgagcgt | gtgatagccg | agcggggcga | 78493 |
| cgccgatcgg | cgccgccccac | cgccgtccga | ggatcgctgt | gcccggtgcc | ggcgcgcccg | 78553 |
| cgccgggtcag | cacccgtggc | cgcagcccg | gcggtgcgaa | ggcggcggtg | ttcgcgccca | 78613 |
| gcgtcagctc | ctcccccgcg | ccgcggcgga | tgaagtccca | caccgggggc | tccattcgcg | 78673 |
| cttggggcag | ctgttcgtag | tccgcgaggg | tcaggggcag | gagggcggtg | gcggtcacgg | 78733 |
| cgccgtcctt | tcgctggcgg | cctggaggcg | ccggcgaggg | ggccgagcga | gcccccgac | 78793 |
| cactatggac | gtcggccgaa | ccgtccacca | acgcagctca | ccgacgggtg | ccaaccgtgc | 78853 |
| gttcgcggca | gttgccacagg | tgtgcgggtca | ccgcgtggc | ttcgattgat | cgggtgcggaa | 78913 |
| tgcggtgcc | cagtcagggc | ttcgcgacga | ccgaggagac | catg | | |
| atg agc atc | ctg cgc gag | gct ccg ggc | acc ggc cgc | gtc ctg cgc | | 79005 |
| Met Ser Ile | Leu Arg Glu | Ala Pro Gly | Thr Gly Arg | Val Leu Arg | | |
| 1 | 5 | 10 | 15 | | | |
| gag gac ctg | cac cag agc | ctg tcc gac | ccg ctg ctg | gac acc atg | aac | 79053 |
| Glu Asp Leu | His Gln Ser | Leu Ser Asp | Pro Leu Leu | Asp Thr Met | Asn | |
| | 20 | 25 | 30 | | | |
| ttc ctc aac | gag gtg acc | gcc cgc tat | ccg cga gcc | gtc tgc ttc | gcg | 79101 |
| Phe Leu Asn | Glu Val Thr | Ala Arg Tyr | Pro Arg Ala | Val Ser Phe | Ala | |
| | 35 | 40 | 45 | | | |
| ccc ggc cgc | ccg ttc gac | ggg ttc ttc | gac gtc gag | cag atc ttc | cgc | 79149 |
| Pro Gly Arg | Pro Phe Asp | Gly Phe Phe | Asp Val Glu | Gln Ile Phe | Arg | |
| | 50 | 55 | 60 | | | |
| ggc atc cgc | ggc tat ctc | gag cac ctc | gcc ggc cag | ggc cgc tgc | ccc | 79197 |
| Gly Ile Arg | Gly Tyr Leu | Glu His Leu | Ala Gly Gln | Gly Arg Ser | Pro | |
| 65 | 70 | 75 | 80 | | | |
| gcg gag atc | agg gac gcc | gtc ttc cag | tac ggc ccg | gcg gcc ggc | cgc | 79245 |
| Ala Glu Ile | Arg Asp Ala | Val Phe Gln | Tyr Gly Pro | Ala Ala Gly | Arg | |
| | 85 | 90 | 95 | | | |
| atc cgc gag | gtg atc gcg | cag tgg ctg | cgg cgc gac | gag ggc atc | gac | 79293 |
| Ile Arg Glu | Val Ile Ala | Gln Trp Leu | Arg Arg Asp | Glu Gly Ile | Asp | |
| | 100 | 105 | 110 | | | |
| gtg gct ccg | gag tcc atc | gtc gtg acg | gtc ggc gcg | cag gag gcg | atg | 79341 |
| Val Ala Pro | Glu Ser Ile | Val Val Thr | Val Gly Ala | Gln Glu Ala | Met | |
| | 115 | 120 | 125 | | | |
| ctg ctg gcg | ctg cgc gcg | ctg atc cgg | gac gag cgc | gac gcg ctg | ttc | 79389 |
| Leu Leu Ala | Leu Arg Ala | Leu Ile Arg | Asp Glu Arg | Asp Ala Leu | Phe | |
| | 130 | 135 | 140 | | | |
| gtg gcg agc | ccg tgc tac | gtc ggc atc | acc ggc gcc | gcg cgg ctg | ctc | 79437 |
| Val Ala Ser | Pro Cys Tyr | Val Gly Ile | Thr Gly Ala | Ala Arg Leu | Leu | |
| | 145 | 150 | 155 | | | |
| gac atc gac | ccg gtg ccc | gtc gcc gag | cgc gag gac | ggc ttc cat | ccc | 79485 |
| Asp Ile Asp | Pro Val Pro | Val Ala Glu | Arg Glu Asp | Gly Phe His | Pro | |
| | 165 | 170 | 175 | | | |

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| | |
|---|-------|
| gag gac ctg gcc cgc gcg gtc cac gcg gag ctg agc cgg ggc cgg cgt | 79533 |
| Glu Asp Leu Ala Arg Ala Val His Ala Glu Leu Ser Arg Gly Arg Arg | |
| 180 185 190 | |
| ccc cgc gcc ttc tat gtc gtg ccc gac cac acc aac ccg tcg ggc gcc | 79581 |
| Pro Arg Ala Phe Tyr Val Val Pro Asp His Thr Asn Pro Ser Gly Ala | |
| 195 200 205 | |
| acg atg ccg ctg gag gcc cgc cac gcc ctg ctc gac ctc gcc ggc gag | 79629 |
| Thr Met Pro Leu Glu Ala Arg His Ala Leu Leu Asp Leu Ala Gly Glu | |
| 210 215 220 | |
| ctc ggc ctg ctg gtg atc gag gac agc ccg tac cgg ctc gtc agc ccg | 79677 |
| Leu Gly Leu Leu Val Ile Glu Asp Ser Pro Tyr Arg Leu Val Ser Pro | |
| 225 230 235 240 | |
| ggg cag cag ctt ccc tcc ctc aag gcc ctc gac ccg ggc cgg cac gtc | 79725 |
| Gly Gln Gln Leu Pro Ser Leu Lys Ala Leu Asp Pro Gly Arg His Val | |
| 245 250 255 | |
| gtc cac ctc gga tcg ttc tcc aag acg ctc ttt ccg ggc gcg cgc gtg | 79773 |
| Val His Leu Gly Ser Phe Ser Lys Thr Leu Phe Pro Gly Ala Arg Val | |
| 260 265 270 | |
| ggc ttc gcg atc gcc gac cag ccg gtg tcg gac gcc gcg ggc ggc gcc | 79821 |
| Gly Phe Ala Ile Ala Asp Gln Pro Val Ser Asp Ala Ala Gly Gly Ala | |
| 275 280 285 | |
| ggc ctg ctc gcc gac gag ctg gcg aag gtg aag agc atg gtc acg gtg | 79869 |
| Gly Leu Leu Ala Asp Glu Leu Ala Lys Val Lys Ser Met Val Thr Val | |
| 290 295 300 | |
| aac acc tcg ccg ctg agc cag gcc gcc gtg gcc ggg atg ctg ctc gcg | 79917 |
| Asn Thr Ser Pro Leu Ser Gln Ala Ala Val Ala Gly Met Leu Leu Ala | |
| 305 310 315 320 | |
| gcc ggc ggc acc gcg gcc gag gcg agt gcg gag agc tcg gcg cac tac | 79965 |
| Ala Gly Gly Thr Ala Ala Glu Ala Ser Ala Glu Ser Ser Ala His Tyr | |
| 325 330 335 | |
| ggc gcg gcg atg cgg cgc acc ctc gac cgg ctc gag gag cac ctt ccg | 80013 |
| Gly Ala Ala Met Arg Arg Thr Leu Asp Arg Leu Glu Glu His Leu Pro | |
| 340 345 350 | |
| gcg tcc ttc cgc gca cgc acg ggc gtg cgc tgg aac cgc ccg agc ggc | 80061 |
| Ala Ser Phe Arg Ala Arg Thr Gly Val Arg Trp Asn Arg Pro Ser Gly | |
| 355 360 365 | |
| ggc ttc ttc ctc gcc gtg aac gtg ccc ttc acc gcc gac aac gcc gcc | 80109 |
| Gly Phe Phe Leu Ala Val Asn Val Pro Phe Thr Ala Asp Asn Ala Ala | |
| 370 375 380 | |
| ctg tcc cga agc gcc gag gac cac ggg gtg atc tgg acg ccg atg tcg | 80157 |
| Leu Ser Arg Ser Ala Glu Asp His Gly Val Ile Trp Thr Pro Met Ser | |
| 385 390 395 400 | |
| tac ttc tac ccg gcc ggc ggc ggc gaa cag ggc atc cgc ctg tcg atc | 80205 |
| Tyr Phe Tyr Pro Ala Gly Gly Gly Glu Gln Gly Ile Arg Leu Ser Ile | |
| 405 410 415 | |
| agc tac ctc acc ccg gag gag atc gac gag ggt gtc aag cgg ctg gcg | 80253 |
| Ser Tyr Leu Thr Pro Glu Glu Ile Asp Glu Gly Val Lys Arg Leu Ala | |
| 420 425 430 | |

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ggc ttc atc acg acc gag atc gcg gca ctc cgg ccg
 Gly Phe Ile Thr Thr Glu Ile Ala Ala Leu Arg Pro
 435 440

tga cccacccgaa tcgcacagtc tgcaacttgc 80322

agaaataggg ccgaacccgt ccccggcgcc ctccggccggg gcggcccggga cccggccggc 80382
 acgtccaccg tggcaccccc gagatctccc ggttgaccag tacgaacggc acggacacga 80442
 tgacgcatcg tggcgatcag atcccgcctcg acgcccaccg acccaccgtg ggatcgataa 80502
 acttcaccgt gaagacagct taaaaatgcg tcagagaacc tcttacgagc ttggcgagcc 80562
 agcgccgcct cgattagtgt cggacattga aagcccgtg cacaagcgca ctccggccacg 80622
 acggccgagc cggccgacgg tcgtcaaagc atctcgttga gacctgcggt gcacgtgtgc 80682
 cagcgggtcat cggagtccag ccattcgggg gttggg

atg gag tca ttg cac atc gcg tca gcg cgc cac 80751
 Met Glu Ser Leu His Ile Ala Ser Ala Arg His
 1 5 10

gag ccg gat cgg cac gac gaa aca cag atg aac act ccg tca atg atg 80799
 Glu Pro Asp Arg His Asp Glu Thr Gln Met Asn Thr Pro Ser Met Met
 15 20 25

cgc gtc gag tgg cta cct gtg gat tca ctg gaa atg ctc gat tca ccc 80847
 Arg Val Glu Trp Leu Pro Val Asp Ser Leu Glu Met Leu Asp Ser Pro
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cgg ctg gcc ggc gag gat ccg cgg cac acc cag atg ctg gcc agc ctc 80895
 Arg Leu Ala Gly Glu Asp Pro Arg His Thr Gln Met Leu Ala Ser Leu
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gac gcc gaa ctg ccg ccg atc atc gtg cac cgc gca agc atg cgg gtc 80943
 Asp Ala Glu Leu Pro Pro Ile Ile Val His Arg Ala Ser Met Arg Val
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 Ile Asp Gly Ala His Arg Leu Gly Ala Ala Arg Leu Arg Gly Asp Glu
 80 85 90

ctg atc aag gcc gcg atg ttc gag ggc agc gag cag gag gca ttc gtc 81039
 Leu Ile Lys Ala Ala Met Phe Glu Gly Ser Glu Gln Glu Ala Phe Val
 95 100 105

ctc ggc gtc aag gcg aac atc gcg cac ggc ctg cca ctg tcc aca gcg 81087
 Leu Gly Val Lys Ala Asn Ile Ala His Gly Leu Pro Leu Ser Thr Ala
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gac cgc acg cgc gcc gcg gaa ccg atc atc gag tcc cat ccg tcc tgg 81135
 Asp Arg Thr Arg Ala Ala Glu Arg Ile Ile Glu Ser His Pro Ser Trp
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 Ser Asp Arg Thr Ile Ala Ala Ser Ser Gly Leu Ser Ala Arg Thr Val
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ggc aac ata cgc ccg cgc ctc gag ctc tcc ggc gac atc ggg cag ggc 81231
 Gly Asn Ile Arg Arg Arg Leu Glu Leu Ser Gly Asp Ile Gly Gln Gly
 160 165 170

APPENDIX A

| | |
|--|-------|
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| Ser Arg Thr Arg Val Gly Arg Asp Gly Arg Val Arg Pro Leu Asp Asn | |
| 175 180 185 | |
| tcc gag ggc cga ctg aag gcc gtc agc tac att cag caa cag ccc gac | 81327 |
| Ser Glu Gly Arg Leu Lys Ala Val Ser Tyr Ile Gln Gln Gln Pro Asp | |
| 190 195 200 | |
| gcc tcc ctg cgg gag atc gcc aag aac gcc ggc gta tgc ccc tgc acc | 81375 |
| Ala Ser Leu Arg Glu Ile Ala Lys Asn Ala Gly Val Ser Pro Ser Thr | |
| 205 210 215 | |
| gcg cgt gac gtg cgc aat cgc ctg cag cgc ggc gag gac ccg ctg ccc | 81423 |
| Ala Arg Asp Val Arg Asn Arg Leu Gln Arg Gly Glu Asp Pro Leu Pro | |
| 220 225 230 235 | |
| ggc ccc cgc cgc acg ggc ggt cac cgc gac gac att tcc ttc gac aag | 81471 |
| Gly Pro Arg Arg Thr Gly Gly His Arg Asp Asp Ile Ser Phe Asp Lys | |
| 240 245 250 | |
| gaa aac acg att cgg ctg ctc gag ccg acc gtg cgg tca ata ctt caa | 81519 |
| Glu Asn Thr Ile Arg Leu Leu Glu Pro Thr Val Arg Ser Ile Leu Gln | |
| 255 260 265 | |
| ggc ttg aag aac gac ccg tgc ctg cga ttt acc gaa tcc ggc cgc aat | 81567 |
| Gly Leu Lys Asn Asp Pro Ser Leu Arg Phe Thr Glu Ser Gly Arg Asn | |
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| ctt ttg cga tgg gtt ctt gcc cgc acg gtt caa gat gat gag tgg aaa | 81615 |
| Leu Leu Arg Trp Val Leu Ala Arg Thr Val Gln Asp Asp Glu Trp Lys | |
| 285 290 295 | |
| gac atg ctc gac gcg gtt ccg tgc cat tgc acg tac gtc ctg gcg aac | 81663 |
| Asp Met Leu Asp Ala Val Pro Ser His Cys Thr Tyr Val Leu Ala Asn | |
| 300 305 310 315 | |
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| Val Ala Arg Arg Cys Ser Gln Glu Trp Leu Glu Phe Ala Glu Thr Leu | |
| 320 325 330 | |
| gag aag aac gcg gcc | |
| Glu Lys Asn Ala Ala | |
| 335 | |
| tga acagcgaatg cggcgatggg agcccttggtg cgcagcgcgg tcgtcgtcgg | 81779 |
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| gttcgagggg cggccctggg tgctctcccc cggccggcga agcagcaccg ccgccgtcga | 82199 |
| cggggccctg gccgtggttt cggcctgcgg cgcacgcgg gtgctgatga gcgccgagga | 82259 |
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APPENDIX A

| | | | | | | |
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| cggcgcggtc | gccgacgtgc | tcgacgacct | gtccgccgag | ctggcgggcga | ccatctcggc | 82499 |
| gctgcgcgag | ctggaggccc | atccggggccg | cgcgaggggcg | ctcgccgcgc | tcaccggcat | 82559 |
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| cgggcgcgac | cggatcgccg | ccggctccgg | aacggcgcg | cgacgcgcac | gcaccgcggg | 82679 |
| cccgcccgtc | accgcgagca | gcgcgagaca | gatcgggcggc | caccagaaac | tcgtagtgcc | 82739 |
| gcagcggtcg | cccgggcaga | ggttggccac | catcgacacg | ccgaggccca | gcgcaagccc | 82799 |
| gaattcggcc | agggcgagca | ccgggcggcg | gacctccccg | cgcccgatcc | gcaccgcgag | 82859 |
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| cccgggtgat | caggggcgcg | ccccagaaca | tgccgagcag | gccgggcacc | agcgccagca | 84179 |
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APPENDIX A

| | | | | | | |
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APPENDIX A

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<223> ORF 4

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```

APPENDIX A

| | | | | | | |
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| gtgccacgtc | cctcagcgtg | gtggccacga | tccgtctctt | cgcgcctctt | cacaccacca | 960 |
| aagtagtttt | gctggtgtga | aagcgggatcg | ttccaggcgg | ttcgcgcgcc | tgtcaaggcg | 1020 |
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| agctgcaggt | gtggaccggg | ctgaaggtct | gcgaccggga | cacctgcggg | tgggcctact | 1500 |
| acgacgcctc | ccgcaaccag | gcgcggcgct | ggtgctcgat | ggccgggatgc | ggcaactaca | 1560 |
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| tgccggcgca | ggcgatcacg | atgatcgcgg | cgagttcgag | gatgttcgcc | gcggtgagcg | 1920 |
| cgcgatgtc | gacgccgagg | ccggtgacga | tgaagaacac | cggcagcagc | accacgctta | 1980 |
| cgtgttcag | cggtgcgcgc | accgcctcac | gcagcgccgc | cgcgggtccc | cggggcatga | 2040 |
| ccaggccggc | gcagaacgcg | ccgaagatcg | cgtgcaggcc | gatccaggtg | gtcgcatatg | 2100 |
| ccgagagcag | cacgaccgcg | accaccgcca | ccagaagata | cgacgcggac | ggccgcgcgc | 2160 |
| ccagcaagac | cagcagcggc | cgtacgaccg | tcaccagcac | caccaggaag | acggccagca | 2220 |
| gggcgaggat | gcgtacgagc | tggaccggcc | cgtcgcgcgt | ggcgatggcc | gtcaccaggg | 2280 |
| ccagcaggca | ccaggccacc | acgtcgtcga | tcgcggcgct | gaccagcgcg | atgctgcccc | 2340 |
| cccgcgtgcc | ggtgagggcg | cgtccgcga | ggatccgggc | cagcaccggg | aacgcggtga | 2400 |
| tcgacatggc | cacgcccagg | aagagcgcg | actcggtgaa | gccgaccttc | ccgcccccg | 2460 |
| tcgtgtcgtg | ccggggatgc | agcaccggtg | ccagcgcgat | gccgaggccg | aacgagaccg | 2520 |
| cgatggagcc | gatcgacacc | gcggcggcgg | tgcgcgggtg | ccgggccaga | gtcgcggggt | 2580 |
| tgaactccca | gccgatcagg | aacgtgaaca | gggccaggcc | gatctggggc | accgcggaca | 2640 |

APPENDIX A

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|-------------|------------|------------|-------------|-------------|------------|------|
| ggtacggccg | ggcctcggcc | gggaagagcc | aggccgtcgg | gttgcccggc | agcaggccga | 2700 |
| gcaggctcgg | gccgagcgcg | atgcccgcga | ggatctcccc | gatcaccgcg | ggctggcgca | 2760 |
| gccgccgcac | ccaccggccg | agcagggcac | cggccgcgag | caccagcgcg | atgtcgagca | 2820 |
| ggacgggtccc | gatcaccagt | tccgcgtggg | ttgccggcga | ctccatcggc | ggctcaggcg | 2880 |
| ctctgcttgg | acatgtcgag | ctcgaccgcc | tcgtagcgcg | ccttgatggt | gccgctgccg | 2940 |
| aagctgcgag | cgccatttcg | ctcgatcacc | tccatgaaga | tcgtcccgcg | ggggtgcacc | 3000 |
| gacttcgtga | agatctggaa | cagctgcccc | tcgtggctct | ggtcgacgag | cacgttcagg | 3060 |
| tcgcgcagcg | cctggatcgg | gtgcccggcc | tgcgggatgc | gccccggtag | cgggcgtag | 3120 |
| tacgagtcgg | gggtgtgcag | gaactcgacg | ccgtgctcgg | acatccggcc | gaccgagcgc | 3180 |
| agcacgtcgt | cggatgatga | cgcgaggtgc | tgcacgcccc | gcccgcctg | gttcttcagg | 3240 |
| aaggtgtcga | tctggccctg | ctcgagcgac | gtgtcgggct | cgatgagggg | gagcgtcaca | 3300 |
| ccgcccagag | ggctctgcac | caccttggag | tccatcgctt | gccggcccac | caggatgcgc | 3360 |
| tctcgaaga | tcattctgaa | gtcgaggacg | tcgcggtaga | agtcgacggg | cgggtcgagg | 3420 |
| gtccccggct | cgaggcagac | ggcgatgtgg | tcgatcgctt | gcaggccccg | gtcgaaccgg | 3480 |
| gtggggctgg | gccgccgcag | ctccaggccg | ggcaggggtc | gggggtccgc | gcccggcgcc | 3540 |
| cgctcgacga | aggtgtgcag | gacgtcaccg | aagccgcgga | tggtcgcgac | ggtcacgcgc | 3600 |
| ttgccggtga | cgggggcgga | taccccagcg | gcgcctcgcc | gcaccgcctc | ggtgaacgcc | 3660 |
| gcgtgggcgt | ctctcgtgct | gagcgcgatg | gccgacacac | cgtcgccgtg | ctgctcgacg | 3720 |
| taggccatgg | cgggatggtc | cccgcggggc | gccgcgggtc | gcacgagccg | gatgtcgctg | 3780 |
| cgteccagcg | ccaccgcgcg | caccggcgcg | tgcgcgtcgc | cggtcccgcc | gtacaccgag | 3840 |
| aagccgtagc | cctccgtaaa | cggggcgctg | gcggattcga | cgteccgcgac | cgcgaattcg | 3900 |
| atgtgggtcga | tgcgcagatc | ggtgaagggt | ccgttgtcca | ctgttctctc | cgggttcgtc | 3960 |
| gtgctacgtc | ggttgtcagg | gcttgtcgca | tcgcaggacc | gtgagatccg | gatcggcgcc | 4020 |
| gtgctcggcc | ggcggcacgg | tggcgcacgt | ctcgaggacc | cagccgggtga | tgcggtaacg | 4080 |
| ctcgggtggc | tcgcgcgcga | ggccctccgg | gccgcgcagg | acgaagtagc | gcagctcgcc | 4140 |
| gtcgcggacc | aggcgtgca | cgcgcggccg | cgacgggaac | ggcgcgcgtc | cgctgaagcc | 4200 |
| gccgagcggc | aggtaggagt | gcccggtcgg | gacgatgagc | cggccggccg | tgcgccacga | 4260 |
| ggacgtggcc | gccaggtagg | tgcggcgctc | gcgggtgggc | gcgagatagt | cgtecgacct | 4320 |
| gcgcaggccc | ggcgtcagcc | ggtcgggtgt | gtcgtcgctg | agccgcacgc | ccaccggccc | 4380 |
| gctcggcccc | gcaccggcct | cgaacgacgt | gccggcggtat | cgcgggttca | gcaccgaggc | 4440 |
| gccccacgcg | accggcaccc | ccagcaggcc | ggcgaccacc | acgacgacgg | cgggcgcgcg | 4500 |
| ggccgtcggc | cgcgcggcca | gcaccaccac | ggccaggacg | gcggcgatcg | gcgcctgcca | 4560 |

APPENDIX A

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|-------------|-------------|-------------|------------|-------------|-------------|------|
| cgtcagccccg | gccaggaacg | agggatagcg | ggtggccagc | cacaggggtcc | agccgggctg | 4620 |
| gacgaccacg | accgcgggca | gcagccaggg | cgccgtgccc | tcgcgggtgcg | tgccgccagag | 4680 |
| ctgcaccgcg | cgggccgccc | cgagcgccgc | cagcggcggg | gccagcacgg | ccaggtaggg | 4740 |
| gttgtgctga | atggtgatcc | ggctgagcac | caccgcggcc | gtcagcaacc | acagtcccca | 4800 |
| gaacaggagg | cggcgcgcg | cgggtgcgcca | cggggccagg | ccgagcagca | ggccgggtcag | 4860 |
| cgccagcggg | taccaccacc | cgatctgggt | ggcgaggcga | tccgcggcaa | gcgcggtcca | 4920 |
| ggaaccgccc | gccgcggccc | cgccgtcggt | gaagccggtc | gtcagcgcg | cgggcacgtg | 4980 |
| gatgcgggcc | cggtcgaaac | cgttgtagcc | gaacaccatg | gcgaaggcgt | tgccggaggt | 5040 |
| ggtgccgtcc | gcccacggcc | ggtgcgagcc | gggcagcagg | gtcagcgcca | gcacccagag | 5100 |
| cagcgagacc | gccaggggtcg | cgccaccgc | cgcccgacga | tggacgaccc | gggcccgcgc | 5160 |
| ccgcaccggt | gcgcggcgga | gataggtgac | gaccagggcc | ggcagcacca | gccacgcctg | 5220 |
| catcatcttc | gcctggaagc | cgagcccgat | ccaggcgccc | gcgagcgcca | gccggggccgg | 5280 |
| gctgccgccc | gtcaccgccc | cgccgaacgc | gtcgggcgcg | agcaccaggc | agagcgtcag | 5340 |
| cgcaccgtcc | tccatggagt | ggccgaacat | cgaggacacg | atcggcgtcg | tggcgaacag | 5400 |
| cccggccgcg | gccagcccgg | cgccggggcc | gtgccagcgc | cgcaccgccc | ggtagaggac | 5460 |
| cagcacggcg | atgacccct | cgacggcctg | cggcagggcc | agggaccact | ggtggaagcc | 5520 |
| gaagacgcgg | gcggagagcg | cctgcgggac | gaaggcgccc | gcgagcttgt | cgatcgatgat | 5580 |
| cgaggcggcc | gggtcgaaac | cgccgggtcca | gaacgcgggc | cagctcaccg | acatgctctt | 5640 |
| caccgccacg | gcgtagtaca | tggggtagcc | gctgcggggc | aggttcgccc | tgtacagcac | 5700 |
| ggccgccagc | gccgcgatgc | ccagcagcgc | cgggcggggc | cacgcgggct | ggccgtccgg | 5760 |
| cgactgccag | aaccgccacc | ggcgacgccc | cggcgcgggc | gcggcaccgg | gcggggcgac | 5820 |
| cctcgggaca | tccacggcgg | ccaaggcacc | ctccggcggt | tcgacgggtg | tacaccgact | 5880 |
| gcgactgacg | gcgactgtag | gagccgttcg | gcctgggttg | gcagtgcgca | cgaaagcggt | 5940 |
| cgttcgactg | acggacggcc | tcagtcgcac | gcgcccggac | ggccgcgccc | cgggtgttaac | 6000 |
| gtcccggtcg | cccaccccga | gtcaccaccg | acaagctcac | aggagacggc | gatgggtggag | 6060 |
| aacgtcattc | aggtcggtgg | gcggggcgca | ccgcggggcc | agcacggcga | ggccgtgccc | 6120 |
| gaggcggaca | tcccgggtcc | gcggaaccgc | atcgacgaga | tcgacgccc | catcatgcgg | 6180 |
| ctgtggcagg | aaagggcctc | gatctcgag | aagatcggt | ccatccgggt | ggcctccggc | 6240 |
| ggaacccggg | tggtgctctc | ccgggagcag | gaggtcatcc | agcgcttcgg | cgcgcgctc | 6300 |
| ggcgaggatg | gcacgaccat | cgcgctcatg | ctcctgcggg | ccggccgccc | cccgtctctga | 6360 |
| ccgctgtcca | accgcgccc | cggcgagtc | gcacagccc | tgacgcttg | tcggcggttc | 6420 |
| cgagtctcgg | ccatagtgt | ggcggtggcg | ccaaccgccc | gccgtgcggc | tcctgaccac | 6480 |

APPENDIX A

| | | | | | | |
|-------------|------------|-------------|-------------|------------|-------------|------|
| cgtcatccga | tccgttcgat | ggaggcgacg | ctgtgcccga | tccgtttgaa | gatcccgacg | 6540 |
| ccaactacct | ggtcctggtc | aacgacgagg | gacagcactc | actctggccg | gtcttcgccc | 6600 |
| acgtgcccga | cggttgagcg | acggtgttcg | gagaggccgg | acggcaggac | tgctcgact | 6660 |
| acatcgagaa | gtcctggacc | gacatgcggc | ccaagagcct | gatcgccggc | atggagaagc | 6720 |
| agaagcaacc | gcagagctga | gcgcgacccg | cggcgggcgt | cgcgccctg | gcggaccctt | 6780 |
| ccggagaggg | agttgccatg | gtcatcgacg | cggccacca | acccaccgtt | cccgaacgct | 6840 |
| tccgggcccga | ggcgatcgcg | cgccccggcg | agcccgccct | cgtggtgctc | cccggcgacc | 6900 |
| cggacgccga | gcccgtcacc | ctcacgtacg | cagagctcga | ccgcgcgcgc | gcggcgccgg | 6960 |
| cggcctggct | cgccgcccgg | ttcccggccg | gggagcgcat | cctcatcgcc | ctgcccaccg | 7020 |
| gcgcgcagtt | cgtcgagctc | tacctggcgt | gcctctacgc | cggcctggtc | gccgtgcccg | 7080 |
| cgcctccgccc | cggagggtcg | tccggcgccct | cagagcgcac | cgtcggcctc | gcggccgact | 7140 |
| gctccccgcg | cctggccgct | gtcaacgcgc | acgacgcggc | gccgctcacc | gccgtcctgc | 7200 |
| gcgagcgccg | cctgtccggc | ctgcccgtcg | gtgcgcttcc | gcccctcgcg | gcggaagcga | 7260 |
| tccgcccgcg | ccgcggggcc | cgcccggaact | cgtggccgct | cctgcagtac | agctcgggct | 7320 |
| ccaccggctc | gcccgaaggc | gtgatgctca | gccaccgggc | cgtgctggcc | aacctccgcg | 7380 |
| cgttcgaccg | cagcagccgg | cacaacagcg | acgacgtgtt | cggcagctgg | ctgccgctgc | 7440 |
| accacgacat | gggcctgttc | gccatgctca | ccgcgggcct | gctgaacggc | gccggcgctg | 7500 |
| tgctgatgtc | gccgacggcc | ttcgtccgcc | ggccggcgga | ctggctgcgg | atgatggacc | 7560 |
| gctaccgggt | caccatctcc | gccgcgcccga | acttcgcgta | cgaacctgtg | gtgcgcgcgc | 7620 |
| tgccgggacga | gcagatcgcc | ggcctcgacc | tgccccgcat | ccgcacgctc | tacaacggat | 7680 |
| cggagccggt | caaccgggcc | accgtccggg | cgttcaccga | gcgcttcgcc | cccttcggcc | 7740 |
| tgcacaccca | cgcggtgaac | ccctgctacg | gcattggccga | gttcaccgcg | tacgtgtcga | 7800 |
| cgaaggctct | cagggcgccg | gcggctcttc | ttcccgcgga | ccctcgcgcg | ctggaggacg | 7860 |
| ccgcgtcgcc | ggccctgcgc | ccggccgacc | ccgcgcgggc | ccgggagata | ccgggtgtcg | 7920 |
| gccgggtgcc | cgacttcgag | gtgctcatcg | tcgacccgga | cgggctacgg | ccgtgcccg | 7980 |
| agggccgggt | cggcgagatc | tggtcgcgcg | ggcccgccgc | gggcgcgggc | tactggggca | 8040 |
| ggaccgagct | caaccgggcc | atcttcgacg | ccaggcccgc | gggcgacggc | caggacggcg | 8100 |
| gctgggtgcg | aacgggtgac | ctgggtgcgc | tgaccggagg | cagactgttc | ctcacgggac | 8160 |
| gcctcaagga | gctgctcatc | gtgcacggcc | gcaacctggc | ccgcacgac | ctcgagccgg | 8220 |
| aggccccggc | cgcgcacgac | gcgggtggacc | accagatcgg | ggcgccgctt | ggggtgcccg | 8280 |
| cgcctcgacga | gcggatcggt | ctgggtgcagg | aggtgcatcc | gcgcacgccc | ctcgacgagc | 8340 |
| tgcccggggt | ggcgagcgcc | gtcagccgcc | ggctcaccgt | ctccttcggc | gtgccgggtac | 8400 |

APPENDIX A

| | |
|---|------|
| gcaacgtgct gctggtgctg cgcggcacgg tgcgcgggac cacgagcggc aagatccgcc | 8460 |
| ggaccgcggt ccgcgagcgg ttcttgccg ggcgcacac ggcgctgcac gccgagctcg | 8520 |
| agccggcgct ggcggcgggtg caggcggggc cgggccc atg acc gta cgc ccg ctg | 8575 |
| Met Thr Val Arg Pro Leu | |
| 1 5 | |
| gcg cca ccc gcg gag gtg cgc ctg gac gac ctg ctc ggc ccc gag gac | 8623 |
| Ala Pro Pro Ala Glu Val Arg Leu Asp Asp Leu Leu Gly Pro Glu Asp | |
| 10 15 20 | |
| gca tgg gac gcc gag acg gcc gcc cgc gac atc gcc gag gag ttc ccg | 8671 |
| Ala Trp Asp Ala Glu Thr Ala Ala Arg Asp Ile Ala Glu Glu Phe Pro | |
| 25 30 35 | |
| gcc cgg ctg cac gac cgg ctg aac tcc ttc ggt ctg caa tcc tgg tac | 8719 |
| Ala Arg Leu His Asp Arg Leu Asn Ser Phe Gly Leu Gln Ser Trp Tyr | |
| 40 45 50 | |
| gta ccg ccg gag tgg ggc ggt gcc ccc ggc gac cac gag cgg ctc ctg | 8767 |
| Val Pro Pro Glu Trp Gly Gly Ala Pro Gly Asp His Glu Arg Leu Leu | |
| 55 60 65 70 | |
| cac ctg tgg cgt gcg gtc gcc cgg cgc gac ctg agc gcg gcc gtc gcg | 8815 |
| His Leu Trp Arg Ala Val Ala Arg Arg Asp Leu Ser Ala Ala Val Ala | |
| 75 80 85 | |
| cac ggc aag acc tac ctc ggg tgc gcg ccg gtc tgg ctg gcc ggt gac | 8863 |
| His Gly Lys Thr Tyr Leu Gly Ser Ala Pro Val Trp Leu Ala Gly Asp | |
| 90 95 100 | |
| gac ggc cag cgc gcg acg ctt gcc gcc gcg gtg ctc gcc ggc acc ccg | 8911 |
| Asp Gly Gln Arg Ala Thr Leu Ala Ala Ala Val Leu Ala Gly Thr Pro | |
| 105 110 115 | |
| gtc gca tgg gcg ctc tcc gag ccc gac cac ggc gcc gac ctg ctg cac | 8959 |
| Val Ala Trp Ala Leu Ser Glu Pro Asp His Gly Ala Asp Leu Leu His | |
| 120 125 130 | |
| ggc acg acc acg gcc ctg ccc cac gac gcc ggc tac cgg ctg cgc ggt | 9007 |
| Gly Thr Thr Thr Ala Leu Pro His Asp Ala Gly Tyr Arg Leu Arg Gly | |
| 135 140 145 150 | |
| ctc aag tgg ccg atc aac aac gcg acc cgg gcc cga tac ctc acc gtg | 9055 |
| Leu Lys Trp Pro Ile Asn Asn Ala Thr Arg Ala Arg Tyr Leu Thr Val | |
| 155 160 165 | |
| ctg gcc cgc acc ggc cgg gcc ggc gac gcc cgc ggg cag agc ctg ttc | 9103 |
| Leu Ala Arg Thr Gly Arg Ala Gly Asp Ala Arg Gly Gln Ser Leu Phe | |
| 170 175 180 | |
| ctg gtc gac aag gag gcg ctc gcc ccc ggc acg tgg ctg ccc cgg ccc | 9151 |
| Leu Val Asp Lys Glu Ala Leu Ala Pro Gly Thr Trp Leu Pro Arg Pro | |
| 185 190 195 | |
| aag gtg gcc acg cac ggg gtg cgg ggc atc gac atc tcc ggc atc gcg | 9199 |
| Lys Val Ala Thr His Gly Val Arg Gly Ile Asp Ile Ser Gly Ile Ala | |
| 200 205 210 | |
| ttc gag gac gcc ggc ctg ccc ggc acg gcc ctg ctc ggg cgg gcc gga | 9247 |
| Phe Glu Asp Ala Gly Leu Pro Gly Thr Ala Leu Leu Gly Arg Ala Gly | |
| 215 220 225 230 | |

APPENDIX A

| | |
|---|-------|
| agc ggg ctg gag acg gtg ctg cgc tgc ctg cag ctg acc cgc acc atg Ser Gly Leu Glu Thr Val Leu Arg Ser Leu Gln Leu Thr Arg Thr Met 235 240 245 | 9295 |
| tgc gcc ggg ctg tgc ctg ggc gcc ggc gac cgc gcg ctg cgg ctg acc Cys Ala Gly Leu Ser Leu Gly Ala Gly Asp Arg Ala Leu Arg Leu Thr 250 255 260 | 9343 |
| gcc cgc ttc gtg gcc cag cgg atg atc atg cgg cgg ccg ctg ctc gac Ala Arg Phe Val Ala Gln Arg Met Ile Met Arg Arg Pro Leu Leu Asp 265 270 275 | 9391 |
| cgg ggc cac ccg gcc ggg att ctg gcg cgc tgc gcc gcc ctg ctc gcc Arg Gly His Pro Ala Gly Ile Leu Ala Arg Cys Ala Ala Leu Leu Ala 280 285 290 | 9439 |
| gcg gcc gag gcg acc gcc gtc gtc ggc acg cgc tgc gtg cac agc ctc Ala Ala Glu Ala Thr Ala Val Val Gly Thr Arg Ser Val His Ser Leu 295 300 305 310 | 9487 |
| acg gcc gag atg agc gtg acg tgc gcg atc gtc aag gcg tac gtg ccc Thr Ala Glu Met Ser Val Thr Ser Ala Ile Val Lys Ala Tyr Val Pro 315 320 325 | 9535 |
| acg gtg gtg gac cgc gtg ctg cgt gag ctg gcc gaa ctg ctc ggc tgc Thr Val Val Asp Arg Val Leu Arg Glu Leu Ala Glu Leu Leu Gly Ser 330 335 340 | 9583 |
| cgg tcc ttc ctg cgt gac gag tac gag cac ggc atg ttc ccc aag ctg Arg Ser Phe Leu Arg Asp Glu Tyr Glu His Gly Met Phe Pro Lys Leu 345 350 355 | 9631 |
| gtg cgc gac cac cac gtg gtc gcg gtg ttc gac ggc agc acc ccg gtc Val Arg Asp His His Val Val Ala Val Phe Asp Gly Ser Thr Pro Val 360 365 370 | 9679 |
| gtc cgc acg gcg ctg gcg cac cag ttc ccg cgg ctc gcg gcc ggc ttc Val Arg Thr Ala Leu Ala His Gln Phe Pro Arg Leu Ala Ala Gly Phe 375 380 385 390 | 9727 |
| gcg gcc ggc gcc gtc tcc gcc gag ggg ctg gcc gag gcg agc gcg gcc Ala Ala Gly Ala Val Ser Ala Glu Gly Leu Ala Glu Ala Ser Ala Ala 395 400 405 | 9775 |
| ggc cag ccg cca ccg ccg ctg gac cgc ggc gcc ctg acc ctg ctc tcc Gly Gln Pro Pro Pro Pro Leu Asp Arg Gly Ala Leu Thr Leu Leu Ser 410 415 420 | 9823 |
| cgc cac ggg tgc tgc gtg gtg cag gcg ctg ccg gcg ctc gcc gtg tgc Arg His Gly Cys Ser Val Val Gln Ala Leu Pro Ala Leu Ala Val Ser 425 430 435 | 9871 |
| gcc gcc gtc cgg ggt ggc ccg gcg ggg ctg gcc cgg cac gcg gcc gcg Ala Ala Val Arg Gly Gly Pro Ala Gly Leu Ala Arg His Ala Ala Ala 440 445 450 | 9919 |
| ctg gcc ggc gag gcg cgg cgg atc tgc ggg cag atg acc gag ctc ggg Leu Ala Gly Glu Ala Arg Arg Ile Cys Gly Gln Met Thr Glu Leu Gly 455 460 465 470 | 9967 |
| ccc tgc gcc cgg ccg tcc atg gtg ggc cac gag ctg gcc gcc gcc tac Pro Ser Ala Arg Pro Ser Met Val Gly His Glu Leu Ala Ala Ala Tyr 475 480 485 | 10015 |

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|---|-------|
| gag tgg tgc tac gcg ggc gcg gcg tgc ctg ctg ctg tgg acc tgc gcg | 10063 |
| Glu Trp Cys Tyr Ala Gly Ala Ala Cys Leu Leu Leu Trp Thr Ser Ala | |
| 490 495 500 | |
| gag ggc cgg cac acc gcg gac ccg ctc tgg gcg gac ggc ctg tgg gtg | 10111 |
| Glu Gly Arg His Thr Ala Asp Pro Leu Trp Ala Asp Gly Leu Trp Val | |
| 505 510 515 | |
| ctg gcc gcg ctg cgt gcc gtg cgc cgg gag ctg gcc cgg gtg ctg cgg | 10159 |
| Leu Ala Ala Leu Arg Ala Val Arg Arg Glu Leu Ala Arg Val Leu Arg | |
| 520 525 530 | |
| gcg ccg gcg ccc gat ccc ggc ccg cac gac gac ggc gcc gac cgg ctg | 10207 |
| Ala Pro Ala Pro Asp Pro Gly Pro His Asp Asp Gly Ala Asp Arg Leu | |
| 535 540 545 550 | |
| ctg gcc gcg cgg gtc gcg gcg gcc gca cgc acc ggt gaa ccg gtg acc | 10255 |
| Leu Ala Ala Arg Val Ala Ala Ala Ala Arg Thr Gly Glu Pro Val Thr | |
| 555 560 565 | |
| ccg ttc ggc acg gcc ctg cgg ccg ccc gcc ggc acc gtc cgg gcg gag | 10303 |
| Pro Phe Gly Thr Ala Leu Arg Pro Pro Ala Gly Thr Val Arg Ala Glu | |
| 570 575 580 | |
| gac ggc cgg tga ccgccgcggc gctcgagaag ctgctcggcg acgcccgca | 10355 |
| Asp Gly Arg | |
| 585 | |
| ccccggcaac ccggtcggct atgcggccgt gctcgccgcc gacgagcggc aggagatgct | 10415 |
| ggccgagggc gagcggctgc tcgaccgcta tcagctcaac gccgagttcg tgccggtggc | 10475 |
| gtacggcggc cggctggccc gcgcgcaccg gctggccgag gtgctgcgcg cggctctggcg | 10535 |
| gcgcgaccgc tgccctggggc tgggctacgg cttcagctcg ctcatcgctt cgggtgaacgt | 10595 |
| gtggtgcgcc ggcaacgagg agcaacggcg ccggggcgcc ggccctgctgc tggccaacaa | 10655 |
| gcgcctcgcg gccgcgttcc acgagctcgc gcacggcacc gacttctccg ccgccgagtg | 10715 |
| cgcgccccgc ccggccggcg gcggatgggt gctgtccggg cacaaggaga tcgtgacgaa | 10775 |
| cctgcgcggg gccgaggcga tgggtgctgtt cgcccgccacc ggcgaggcgc gcggcagccg | 10835 |
| gtcgcacagc cagttcctgc tgggtgcgcga cgagctgccg gccgcgcggg cgggtggaccg | 10895 |
| cccgcggtat ccgggcagcg ggatgcgcgg catcgacctg ggccggctgg tcttcgacga | 10955 |
| ctgcccggtg ccgtcctccg cgctgttggg cgaacaggga cacggcatcg aggtggcgct | 11015 |
| gcgggcctat caggtcaccc ggatggtgtc gccggccctg ctggtgggccc cgctggacag | 11075 |
| cgcggtgcgg ctggccaccg agatggcgat ggagcgccgg ctgtacgggg ccgccgtcgc | 11135 |
| cgacctgccg tacgtgcgca ccaccatcgc gcgcgcctat gctgccctgc tcaccgtcga | 11195 |
| cgtcttctcg ggcgtggggc tgcgggcgct gcacctgctg ccggaggcca cggccgggta | 11255 |
| cgccccgcc gtgaagtacc tgaccgcgca gatcgtgctg gacgcgatcg acgatctgcg | 11315 |
| ctcgggtgctg ggccgcgagg gttatctgcg gcaggggccc tacgcgatgt tccagaagct | 11375 |
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APPENDIX A

| | | | | | | |
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| cggcatgcgt | ggcgacccgc | tggccggcgt | cctgcacgac | tcgtggcacg | acgagggccc | 11615 |
| ggtcggccgg | ttcgccgagc | ggttccaccg | ggagctgacc | ggcctgcggg | acgcctgccg | 11675 |
| ggagctgggg | ccggccgaca | tcacgatcga | cgccaacccg | gccgccttcg | cgctggccga | 11735 |
| ccggtacacc | gtgctgctgg | ccgcggcctg | cgccctcggg | gtgtggcgcg | ccggtggccg | 11795 |
| gctccaccgg | ccggcgctgc | tggcgtcct | ggacgggctg | gccggccggc | tcggcggcga | 11855 |
| ggccgtgctg | agcgtggccg | agcgcgagca | cgtgggagcac | cagctcttcg | agatggccgc | 11915 |
| cgaccgggta | cgcaccagcc | ggctgctgga | cctgagcgcc | cgtcagctcc | ccggctgacc | 11975 |
| gggcgcgata | aggcagccgg | cgagcgcggg | cgcgcccag | gcccggctca | gatagctgag | 12035 |
| caccagctcc | tcgagctcga | cccgtccac | cgtccacggc | cgccggggca | ggtccacctc | 12095 |
| ggcccgacc | actccccgc | tgtacgagcc | gaagtcctcc | accagatgg | gtccatccc | 12155 |
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| catggccttc | atcgtcgggg | agcgccccgc | ggaccgggtac | cgcctaaga | agggttgatt | 12935 |
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APPENDIX A

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atg acg atc cgt 14217
 Met Thr Ile Arg
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 Val Leu Ile Ala Asp Asp Gln Ala Met Ile Arg Ser Gly Leu Arg Leu
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 Ile Leu Glu Asp Glu Pro Asp Ile Glu Val Val Ala Glu Ala Val Asp
 25 30 35
 ggc gtg gac gcg gtc gca cag gcg cgc aag ctg cgg ccg gac gtg tgc 14361
 Gly Val Asp Ala Val Ala Gln Ala Arg Lys Leu Arg Pro Asp Val Cys
 40 45 50
 ctg gtg gac atc cgc atg ccc cgc atc gac ggc atc gag gtg acc cgc 14409
 Leu Val Asp Ile Arg Met Pro Arg Ile Asp Gly Ile Glu Val Thr Arg
 55 60 65
 tcg ctg gcc ggc ccc ggc gtg gtc aat cct ctg cgg gtc atc gtg gtc 14457
 Ser Leu Ala Gly Pro Gly Val Val Asn Pro Leu Arg Val Ile Val Val
 70 75 80
 acc acg ttc gac tcg gac gaa tac gtc tac ggc gcg cta cgc ggc ggg 14505
 Thr Thr Phe Asp Ser Asp Glu Tyr Val Tyr Gly Ala Leu Arg Gly Gly
 85 90 95 100
 gcg gtc ggc ttc atc ctc aag gac gcc ggc ccg aca ctg ctg gtg gag 14553
 Ala Val Gly Phe Ile Leu Lys Asp Ala Gly Pro Thr Leu Leu Val Glu
 105 110 115
 gcc gtc cgg gcg gcg cac aag ggc gac gcg ctg gtc tcg ccg tcg gtc 14601

APPENDIX A

| | |
|--|-------|
| Ala Val Arg Ala Ala His Lys Gly Asp Ala Leu Val Ser Pro Ser Val | |
| 120 125 130 | |
| acc gtg cgg ctg ctg aac cac ctg aac gcc tgc gcg gcg ccg gcc ggc | 14649 |
| Thr Val Arg Leu Leu Asn His Leu Asn Ala Ser Ala Ala Pro Ala Gly | |
| 135 140 145 | |
| tcc gag ccc att ccc ctc tcc gac cgc gag ctc gag gtg gcg cgg gcg | 14697 |
| Ser Glu Pro Ile Pro Leu Ser Asp Arg Glu Leu Glu Val Ala Arg Ala | |
| 150 155 160 | |
| atc gcc cgc ggc cgc acg aac cag gag atc gcg gcc gat ctc ttc atc | 14745 |
| Ile Ala Arg Gly Arg Thr Asn Gln Glu Ile Ala Ala Asp Leu Phe Ile | |
| 165 170 175 180 | |
| tcg ctg agc acg gtg aag ggg cac gcc tcc acg atc cag tcc aaa ttg | 14793 |
| Ser Leu Ser Thr Val Lys Gly His Ala Ser Thr Ile Gln Ser Lys Leu | |
| 185 190 195 | |
| ggc gta cgc aac cgg gtc ggc gtg gcg gcc tgg gcc tgg gag aac cgg | 14841 |
| Gly Val Arg Asn Arg Val Gly Val Ala Ala Trp Ala Trp Glu Asn Arg | |
| 200 205 210 | |
| ctg gtc gag ggg agc | |
| Leu Val Glu Gly Ser | |
| 215 | |
| tga cccggcccgc | 14869 |
| gcgagcgtgc gaccggcgac atccgcggtc gaacgcgcgc ggtgggcgga cacgtggcgc | 14929 |
| acagcggccc gcggcaacca tcatgcagct cagatggctc ctgaggagga ttcgtggctg | 14989 |
| ctcaaccgga agagttcgat gtcacgtgg tcggcggcgg gccgggcggg tccacggccg | 15049 |
| cggcgctgac cgccaagcag ggcgccaagg tgctgctgct ggagcgggag aagttcccgc | 15109 |
| ggtaccagat cggcgaatcg ctgctgccgt ccaccgtgca cgggtgtctgc aacctgctcg | 15169 |
| gggtcggcga cgagatcgcc aaggccgggt tcatgcgcaa gcacggcggc acgttcaagt | 15229 |
| ggggcaccag taccgagccg tggacgttca ccttcgccac ctgcgcccg atggccgggc | 15289 |
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| gcttcgtcgt cgacgcctcg ggcaaccgca gcacctgca cagcaggtc ggcggcacc | 15529 |
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| ggctgcccgc gccgaactcc ggcaacatcc tctgcgtcgc cttcggtcc ggctggttct | 15649 |
| ggtacatccc gctcagcgag acgctgacca gcgtcggcgc ggtgggtccgc cgggagatgg | 15709 |
| cacacaaggt gcagggcgac caggagaagg cgtgttccga gctgatcgcc gagtgccga | 15769 |
| tgatcgccga cttcctcggt gacgccacc gggtcaccga gggcgactac ggccagatcc | 15829 |
| gggtccgcaa ggactactcc tactccagca cctcgtactg gcggccgggc atgtgcctgg | 15889 |
| tcggcgacgc ccctgtctc atcgaccgg tgttctctc cggcgtgcac ctggcgacct | 15949 |

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| accgcgcctt | caccgagttc | gagcagcgt | accggcgcca | gttcggcgtc | ttccacgact | 16069 |
| tcctggtgag | cttctacgac | atgcacgtcg | atgagagctc | gtactttctgg | gccgcccgc | 16129 |
| aggtgaccga | gagcagcgca | ccggccatgg | agtcgttcac | cgagttggtc | ggcggcatcg | 16189 |
| cctccggcga | ggacgcgctg | accggctcca | ccgagctggt | gcggcggcac | tcccggcaga | 16249 |
| ccgcggagct | gggccaggcg | gtggccggcc | tcgaggaggg | cggcaccggc | ttctcgcgcg | 16309 |
| ggtcgagcgt | cgtggcgag | gccatgttcg | aaggctcgca | gatccaggcc | ggcgcgatcc | 16369 |
| tgggcccga | gggcacgcag | gagcagccgc | tgttcgaggg | cggtgtgacc | ccttcggcga | 16429 |
| acggcctcac | gtgggtcgcc | gccgactgag | cacacgaaca | gagatcccct | cgccgcgggc | 16489 |
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| | | | | | | |
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| | | | | | | |
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| gccgtcatgc | gccacgcgcc | ggagagggtcg | acgtcgatca | tcagctgcca | ctcgtcctcg | 21529 |
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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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APPENDIX A

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| gtacgcccgg | tgctcgccg | gcgcgcggc | gagccggggc | cgggcgacgt | agcccgga | 32269 |
| cggctcgggc | gcggcgagct | cgccgcgcg | gccggcgagg | aaggcctgga | tctcggcgag | 32329 |
| catcgctcg | agcgtggcgt | ggtcctggac | gaggtggtgg | atctggagca | gcgccagcca | 32389 |
| tccgcgcgcg | tccggccggg | ccgcgcagcg | caccgcagc | agcggggccc | ggtcgagcgc | 32449 |
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| caggaacgcg | tcgaggcggg | accgcgaatc | gaatccgagg | acggccggca | gcacgtacac | 32689 |
| gtcgtcgccg | ccgtccatca | ggctgtggaa | gagcagcccc | tcttcagcg | gcgcgagcgg | 32749 |
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| gccctcgggg | gtgcccgact | ggaacagggc | gcggacggga | accgcgatgc | cgtgctcgcg | 32989 |
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APPENDIX A

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| ctcgcgagcg | gcggcggccg | cccgggccac | cggcccgaac | gcggcaagcg | ccgcctcgac | 33409 |
| ctcgcccagc | tcgatccgga | aaccgcggat | cttgacctgg | tcgtcgacgc | ggcccaggaa | 33469 |
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| cagcgcgctg | tcgagaacga | aggcgcgggg | gttgcgcagg | ggcgtgccga | tcggcacccg | 33709 |
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APPENDIX A

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| gagtttggac | aggaggacgg | cgagggcggt | ttgcacggtc | atgaagacgg | tgacgccggt | 35329 |
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| gtggcccgcg | taggtggcct | cggcgggacg | ggggtggtcg | gcgggcagcg | gtagctcgtc | 35449 |
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| cagggcggtc | caggccggcg | cctcgccccg | gatccggggc | gcgtaggcga | cggcgaggtc | 35629 |
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APPENDIX A

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APPENDIX A

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| gtccgcgggc | gcccggccgg | caccggcttc | gaaccccagc | ggtgccggca | gcgcgcggcg | 42649 |
| gtcgaccttc | tggttgccgg | tcagcggcag | cgcgtccagc | tgcacgaacg | cggacgggac | 42709 |
| gagataggac | ggaagccgct | gctcggcggtg | ggcgcgggcg | gcctcgaccg | tctccggcgc | 42769 |
| cgcgaccagg | taggccacca | gccgcttgtc | gccgggtacg | tcctcgcgga | cgatgaccgc | 42829 |

APPENDIX A

| | | | | | | |
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| cgcttggtg | acgcccggca | acgcggcgag | gaccgcctcc | acctcgcccg | gctcgacgcg | 42889 |
| gtagccgagg | atcttcacct | ggtcgtcggc | ccggccggcg | aacaccagct | cgccctcgcc | 42949 |
| ggtcacgagg | accaggtcac | cggtgcggta | gaggcgggcg | ccggcggtga | acgggtcggc | 43009 |
| gacgaaccgc | tcggcggtgg | tgcccggcat | gtcggcgtag | ccccggggca | cgccggcgcc | 43069 |
| ggcgatgtac | agctcgccgg | tgacaccgac | cgggaccggc | tggagaagcc | cgtcgagcac | 43129 |
| gtagacgagg | gtgttgctga | gcggccgccc | gatgggcagc | accgggctgg | gctcgcgcac | 43189 |
| cacgtgctgg | gtggcgagca | gcgtcacctc | ggtcggggcg | tacagctgcc | gcacccgcac | 43249 |
| gccgggattg | gcgtccagca | cgccggcgac | cgccctcgcc | gggaccacgt | cgccgcgggt | 43309 |
| gagcacctcg | gtgagcccg | cgaagcacga | cggttcctcg | gccagcacgc | gcaacaggcc | 43369 |
| cgcggtgacg | tgacgtggg | tcagctcgtg | ggcccggtac | agctgccgca | gcacaccggt | 43429 |
| gtcgatgctc | tccccgggtg | cgaccacgac | cgtgccggcg | gtcagcagcg | gcacccagag | 43489 |
| ctcgaacgag | gaggcgctga | aggcggtcgg | ggcggtgaac | aggaccgcg | gcgtcggggc | 43549 |
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| gaagagctcg | ggcaccgacg | cctgcgggac | ccggcgggcg | gtgtcggttc | agccggagac | 44089 |
| gaccgggtc | agctcgtcct | cgcccagcac | gccgaccgcg | gccagcgggc | ttccggggcg | 44149 |
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| cggcggggcg | aagaggttcg | cgccctgctg | ggccacggcc | agcgggcggt | gctcgtgggc | 44449 |
| gatgagctcg | atgagctgggt | cacgcaggcc | gtcgagggcg | tcgccgacgg | gcgcgccgag | 44509 |
| ccgcacccgc | accggcagcg | tggtgatgaa | caggccggga | acgcggctcg | cgccggcgcc | 44569 |
| cgagttcatc | cgcccgaaaca | ggaccgtgcc | gaagacgacg | tcgtcacgcc | cgcccgagct | 44629 |
| gccgagcacc | cgcgccacg | cgagggtgaa | gagcgctgcc | gggctgacgc | cgtgttcccg | 44689 |
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APPENDIX A

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| gccgagcaac | ccggcgaagt | agcgctcgtg | ctcctcgagg | ggcacgccga | ggcgggtgtg | 44869 |
| cgcgacgaac | tcgcggaacg | gcaccggctc | gggcaggctg | ccgcgcgggc | cgccaggtta | 44929 |
| cgccgccagc | tcctcgagga | ggatgtcgag | ggcgggtgtg | tcctgcacga | ggtggtggat | 44989 |
| gcgcagcacg | gcgagccagc | gctgcggatc | gccggggcgg | gcggcgacga | cggcctgcac | 45049 |
| cagcggcgcc | tcggacaggt | ccatccaggc | cgtgcgcagc | gcgttcagct | gctcgaccgg | 45109 |
| gtcgaggtcg | tcccgcagca | ccacctcgtc | gacgggcagg | cgcgcggtgc | gccacaccac | 45169 |
| ctgcaccggc | tcgcgcagcc | cctgccacac | cacactcgtc | cgatacacat | ccgtacggtc | 45229 |
| gacgacctgc | tgcaaggcgg | ccaggaagcc | gtccaaccgg | tcccgggagt | cgaactccac | 45289 |
| caccgtcggc | gtcacatata | cgctccgcga | atcccggctg | gccatcatgt | gatggaagaa | 45349 |
| aatgccctcc | tgcaacggcg | ccaacggata | cacatccgcg | atgttcgccc | caccaccagg | 45409 |
| caccgaatcc | acgacaacag | caagttcgtc | ggcgggtcaga | tcggccagcg | gcagcatctc | 45469 |
| cggggtcagc | tcgcgcgcac | cctcgggaat | caggttcggc | ggcaccacca | cggcaccatc | 45529 |
| accgaccgcc | tcggccagcc | cggccggggg | cggcggtgtg | aacaacgccc | gcaccggcac | 45589 |
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| cagcggaag | aaatcgctct | ccacacccac | ccgctcgacg | ccgagcacct | cggcgaacgc | 45709 |
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| ggccagcgcg | acgatcgagg | acggcacgag | gtatccgggc | aaccgctgct | gcgcgtacga | 45889 |
| ccggaggggtc | tcacgtcgc | cgcgccagac | gtacgccacc | aagcgcttgt | cacccggcac | 45949 |
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| cacctcgccc | ggctcgaccc | ggaaaccggg | gatcttcgcc | tggtcgtcgg | cgcggccggc | 46069 |
| gtagacgagg | cggcccccg | cgtcccagcg | cacgatgtcg | ccggtgcggg | acatccgctc | 46129 |
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| cgggcggtac | gagttgcccc | gccaccggcc | gtcgcgcagc | caccggcggg | ccaggctcgt | 46429 |
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| ggcgaggtcc | gcgccgagcc | ggcgctccgg | cggcacgata | acgagggcgg | cgcggcgag | 46609 |
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APPENDIX A

| | | | | | | |
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| gtgcgaaacg | acgacaccct | tggggcgctc | ggtcgatccc | gaggtgtaga | tgacgtaggc | 46789 |
| cgcgtgaccg | ccgagcagga | cgccccgcgc | gtcggcgctc | gtcacggccc | cggccgggca | 46849 |
| ctgcgcgacc | tcgtcacgca | cggcggggca | gtcagagcagg | tgcacgggca | cggcgccggt | 46909 |
| gggcacaccg | tgggacgccc | gggcccagcac | gagcgccgga | gaggcgctcg | ccacgacgtc | 46969 |
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APPENDIX A

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| accgggacgt | cgatgcccgc | ggccgagcgg | agccggctga | gcagccgggt | ggcgagcagc | 48889 |
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APPENDIX A

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APPENDIX A

| | | | | | | |
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| cgctcgcccg | tcaaccggg | catgcccgc | tagccccgg | ccagaccgga | cccggccaca | 54289 |
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APPENDIX A

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| tacatgcggt | agaccgcgc | accgggcacc | ggaccggccg | gcaacacaac | ggcccgatcc | 54889 |
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| cagagggcgt | agtcggcgta | ctgcaccggc | agcgcgcgga | gggcggcgcg | cgtcgcgtcg | 56209 |
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APPENDIX A

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| gcctcgggca | gccggtcggg | cgtgacctcg | acgaccggaa | cggagacctg | cggatcgtcg | 56449 |
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APPENDIX A

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| gccacctgct | cggcgaacaa | cgccggcacc | gacgactcca | ctaccggggcg | agccgtgtcg | 58369 |
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| ccgtcgtcgt | cgaccgagac | caccacggga | tagttcgtgg | tgtcgcgggtg | cagcaccggc | 58609 |
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APPENDIX A

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APPENDIX A

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| gacggcacca | tgtaaccggg | caaccgctgc | tgcgcgtacg | accggagagc | ttcgacgtca | 63409 |
| ccgcccacga | cgtacgccac | caagcgcttg | tcaccgggca | cgctctcacg | cacgatcacc | 63469 |
| gcggcctggc | tcacaccggg | tcgggcggcc | agcaaggcct | ccacctcgcc | gggctcgatc | 63529 |
| cggaatccgc | ggatcttgac | ctggctgtcc | gagcgaccgg | cgaacaccag | gcgcccctcg | 63589 |
| gcggctccacc | gcaccacgtc | gccggtgcgg | tacatccgct | ccccggctc | gaacgggcac | 63649 |
| gccacgaacc | gctccgcggt | caggccggcc | cggttcagat | agccgcgggc | gagtccggcg | 63709 |
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| acgtacgccc | gcagattcgg | cacgggcgtg | ccgatcggcg | ccacgcttcc | ccagtcaccg | 63829 |
| gcctcgggcc | gccacgtcgc | cgcgttgacc | gtggtctcgg | tcgggcccga | cgagttgaac | 63889 |
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APPENDIX A

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| ggcagcgtcg | cgtgcgtcac | gccgtactcg | gcgaggaacg | cggccaggte | ggcgcccagt | 64069 |
| cgcgcgtccg | gcggcacgaa | ggtcagcgcg | gcgccggcca | gcagcgccat | cgaccactcg | 64129 |
| tgcacgaaca | tgtcgaagcc | gggcgaggcg | aactgcgcca | cccgggcacc | cggaccgagg | 64189 |
| ccgaaccggc | cgtggtcgag | cgtgagattg | gcgaggccgt | cgtgcgtgat | cagcacgccc | 64249 |
| ttgggcccgc | cgggtgatcc | cgagggttag | atgacgtagg | cgagggtggc | gccgcgcagg | 64309 |
| gcggcgcgcc | ggtcccggte | ggtgacggcc | tgcgccgagt | gggcgcgccac | ctcggcggcg | 64369 |
| acggccggcg | cgtccacgac | cagcacccga | atcccaccgg | ccaccggcac | ccacggcgcg | 64429 |
| gtggcccgct | cggccagcac | gaacgcgggg | gccgcgtccg | cgagcaggta | gtccaccggg | 64489 |
| tgcgggggca | ggtccggatc | cacgggcaga | tacgcgcgcg | ccgccttgag | cacggccagg | 64549 |
| atcgccacca | tcagctccgg | gccgcggcgc | atcatcaggg | ccaccgggtc | gtcggcgccc | 64609 |
| accccgcgcc | cggccagcca | gcgcgcgcgc | cgggttgacc | gctcctcgag | ctcggcgtag | 64669 |
| gacatctccg | cgcgggccgt | caccagcgcc | ggccagggtg | gtgtccgcgc | cgctgcgccc | 64729 |
| gtgaagagct | ccggcaccag | ggccggctgg | gccgggaccg | ccgtggcggt | ccagccgtcc | 64789 |
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| aacagggggc | tgccgcgggg | caggccggcc | gactgctgcg | cgagcaccag | cggggcggtgc | 65149 |
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| cgcgcgcgag | gcgccacgaa | attgcggaac | ggtacggggc | gggggagggtg | gtcggttgcg | 65629 |
| ccggcgagga | tggtgcggat | ctcgtcgagg | acgatgtcga | gggcgggtgtg | gtcctgcacg | 65689 |
| agggtggtgca | tgcgacgtag | ggcgagccag | ccgcgcgtcg | gttcgggtgc | gatgtggacg | 65749 |
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| | | | | | | |
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| aaagccccga | ggaaggcgtc | gagctgctca | cgcgtgccaa | cgcgacagcag | gtacggcagc | 65989 |
| gcgtagacgt | cggcgggtgc | gccctcggtc | atgaggtggt | ggaagaagat | gccctcttgc | 66049 |
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| cgggcgccgc | cctgggggat | gaggttgggc | ggcacctcga | tcggggccgc | cacggctgag | 66229 |
| acggccagcg | ccgcgggggt | cggcgtggcg | aagagcgcgc | gaacggagac | gtgcaggcca | 66289 |
| cgctgccgca | aatcctccac | aaggagagacg | gcaagcagcg | agtgaccgcc | gagagcgaag | 66349 |
| aagtcgtcgt | cgacaccgac | cgatccagg | cagacacct | cggcgaacgc | ggcacacacc | 66409 |
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| tggtgacat | cgggatgttg | agccagaacc | gcttcaacct | cgcccggctc | caccgatag | 66709 |
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| tctttgacc | ggcgcacccg | ctccgccgac | accgcacgc | caccctgag | cacctcggtc | 67129 |
| agggcccgga | agcacgacgg | gtccagcacc | cgcagcaggg | cgcggtgac | gtgcacgtgc | 67189 |
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| gccacccgct | tcgcgaacaa | cgccggcacc | gacgactcca | ccaccggacg | agccgtgtcg | 67909 |
| ttccactcca | ccagcagccg | cgaccgctcc | cccggcgaca | gcacctcgat | gccggagagc | 67969 |
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| ccggccgctg | cctcgctgaa | caggctcgcc | gagagcgtca | ggattccgcg | gatgccggcc | 68089 |
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| gagcggccga | tggtgagcgg | ctcgctcgc | accccgcca | ggtcgatcgg | cgtcccgtcg | 68209 |
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| accaaggtgt | tgacgaagaa | accgatcagg | tcgtcgagcg | cggcgctcgt | gcgcccggcg | 68449 |
| accgggatgc | cgagcgggac | gtcgcgccg | gcgcgagct | tggacagcag | gatcgcgacg | 68509 |
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gtg agc gcc gcg 74816
Val Ser Ala Ala
1

ggc tcc ggt ttc gtc acc acc aac ggg gtc cgc ctg gcg tat cgc cgc 74864
Gly Ser Gly Phe Val Thr Thr Asn Gly Val Arg Leu Ala Tyr Arg Arg
5 10 15 20

tcc gga gcc ggc gag ccc gtt ctc atg atc atg gga tcg ggc tcg gcc 74912
Ser Gly Ala Gly Glu Pro Val Leu Met Ile Met Gly Ser Gly Ser Ala
25 30 35

ggc cag acc tgg acg gtg cac cag acg ccc gcg ttg cac gag gcg gga 74960
Gly Gln Thr Trp Thr Val His Gln Thr Pro Ala Leu His Glu Ser Ala Gly
40 45 50

tat tcc acc gtc gtc ttc gac agc cgt ggc atc ccg ccc tcg gac gtg 75008
Tyr Ser Thr Val Val Phe Asp Ser Arg Gly Ile Pro Pro Ser Asp Val
55 60 65

APPENDIX A

| | |
|---|-------|
| ccc gcc ggc aag tac tcc ctc gcc gac atg acc gcc gac acc cgc ggt Pro Ala Gly Lys Tyr Ser Leu Ala Asp Met Thr Ala Asp Thr Arg Gly 70 75 80 | 75056 |
| ctc atc gag gcc ctc gat ctc gcg ccc tgc cgg atc gtc ggc acc tcg Leu Ile Glu Ala Leu Asp Leu Ala Pro Cys Arg Ile Val Gly Thr Ser 85 90 95 100 | 75104 |
| ctg ggc gcg atg atc gcc cag gag ctg gcc gtc gac cat ccg gag ctg Leu Gly Ala Met Ile Ala Gln Glu Leu Ala Val Asp His Pro Glu Leu 105 110 115 | 75152 |
| gtg cgc tgc gcg gtc ctg atc gcg acc ctg gcc cgg ccc gac gcg gcc Val Arg Cys Ala Val Leu Ile Ala Thr Leu Ala Arg Pro Asp Ala Ala 120 125 130 | 75200 |
| cgc gcg gcg cag aac cag gcc gac atc gac ctg ctg gag agc ggg gtc Arg Ala Ala Gln Asn Gln Ala Asp Ile Asp Leu Leu Glu Ser Gly Val 135 140 145 | 75248 |
| acg ctg ccc gcc gcg tac gag gcc gcg acc gcg gtc ttc aag atg ttc Thr Leu Pro Ala Ala Tyr Glu Ala Ala Thr Ala Val Phe Lys Met Phe 150 155 160 | 75296 |
| tcc ccg gcg acg ctc aac gac gac gtg gcc gtg cgc gag tgg ctc gac Ser Pro Ala Thr Leu Asn Asp Asp Val Ala Val Arg Glu Trp Leu Asp 165 170 175 180 | 75344 |
| atc ttc gag ctc tcc ggc acg ggc gtc tcg gcc ggc ggg cag gcc tgg Ile Phe Glu Leu Ser Gly Thr Gly Val Ser Ala Gly Gly Gln Ala Trp 185 190 195 | 75392 |
| gcc gag ctg acc ggt gac cgg cgc gcc gcc ctg cgc tcg gtc acc gcg Ala Glu Leu Thr Gly Asp Arg Arg Ala Ala Leu Arg Ser Val Thr Ala 200 205 210 | 75440 |
| ccc tgc cgg gtg atc tcg ttc gcc gac gac ctc atc acg ccg ccg cac Pro Cys Arg Val Ile Ser Phe Ala Asp Asp Leu Ile Thr Pro Pro His 215 220 225 | 75488 |
| ctg gcc gcc gag gtg gcc gag gcg atc ccc gac tgc gac ctg gtc gag Leu Ala Ala Glu Val Ala Glu Ala Ile Pro Asp Cys Asp Leu Val Glu 230 235 240 | 75536 |
| ata tcc cgc tgc ggg cac ctc ggc tat ctg gaa cgg ccg gac gcg gtg Ile Ser Arg Cys Gly His Leu Gly Tyr Leu Glu Arg Pro Asp Ala Val 245 250 255 260 | 75584 |
| aac gcc gcg atc ctc gag ttc ctc gac tcc cac Asn Ala Ala Ile Leu Glu Phe Leu Asp Ser His 265 270 | |
| tag ggacgcgccg gcacgaccgg cgcacccgct accgcgagag | 75660 |
| agaaggttcc gtggcaacca tcgacggccc ggatctgggc gtcacggggc tgcgcgtoga | 75720 |
| cggcctcata ccgatgcaga aggtcaggcc cggcacggtg cggcgcatec tcccgtagc | 75780 |
| gaagaaacac cgctgggtccc tggccgtcgc cctgctgatg accgtggtcg acgccgcgct | 75840 |
| cacggtcgcc aacccgctgc tgctcaagca gatcatcgac cgcggcatcg tggccggccg | 75900 |
| cctggacgtg gtggtcgggc tgtegtgtgt ggtggccggc ctgcacctgg tcaacgtggc | 75960 |

APPENDIX A

| | | | | | | |
|-------------|------------|-------------|-------------|-------------|-------------|-------|
| ggcgatccac | gtgcagacgc | tggcctccgg | gcgcgctcggg | caggggtctca | tctacgacct | 76020 |
| gcgcaccaag | gtgttcgccc | acgtcatgcg | ccagccgctg | gcgtttcttca | cccggggcgca | 76080 |
| gacgggggtcg | ctggtgagcc | ggctcaacac | cgacgtggtc | ggcgccgagc | aggccatgac | 76140 |
| ctcgatgata | acgcagacgg | tctccacggt | cctgaccgtc | gtgctggtca | tgggcgcgat | 76200 |
| gttctacctc | tcctgggcca | tcgcctggt | ggcgctgggtg | ctcatcccgc | tgtttcttct | 76260 |
| gcccggcaag | ctcatcgcg | gccggctgga | gcggctggcc | cgcgccggca | tgcaggctga | 76320 |
| cgcgagctg | ggctcgatga | tgaacgagcg | gttcaacgtc | tccggcgcca | tgctggtcaa | 76380 |
| gctctacggc | cggccggaga | gcgaggagac | cgccttcgcc | ggcgggggccg | cgcgggtgcg | 76440 |
| tgacatcgcc | atctcgatgg | gcgtgcacgc | acggctgctg | ttcatcatcg | ccacgctgct | 76500 |
| gaccacggtg | accacggcca | tgggtctacgg | cttcggcggc | gccctggtca | tgcacggcac | 76560 |
| gctcggcatc | ggcacccttg | tcgccatggt | cgccttgcgtg | gcgcagctgt | acggcccgggt | 76620 |
| gaaccagctc | accaacatcc | aggtggacgt | cgtcacccgc | ctggtgagct | tgcacccgggt | 76680 |
| cttcgaggtg | ctcgacctcg | accgctcgt | caaggagcgc | ccggggcgccc | gcgccttgc | 76740 |
| ggccgcgag | cggggccgct | cggcgccgc | ggacatcgag | ttcgacaacg | tcggtgtccg | 76800 |
| ctatccgggc | gcggacgagg | tctcgtggc | ctcgttgagg | accgtggccc | agcggctctc | 76860 |
| cgacggcacc | gcggagcggc | cgggtgctcaa | cgggatcagc | tttctcgccc | cggccggcaa | 76920 |
| gctcacccgc | ctggtcggcc | cgtcggggcg | cggcaagacc | acgatcacc | acctggtgcc | 76980 |
| gcgcctctac | gacaccacct | cgggcacggt | cgggatcgcc | ggccacgacg | tccgcgacct | 77040 |
| caccctgcgc | tcgctgagcg | agtcocatcg | cgtggtcacg | caggacgcgc | acctgttcca | 77100 |
| cgacaccatc | cgggccaacc | tgtcttacgg | cgtcccgac | gccggcgagc | gcgacctcgt | 77160 |
| cgcggcctgc | gaggcgggcc | gcattctggga | gatggtgtcc | tcgctgccc | acgggctgga | 77220 |
| cacggtggtc | ggcgatcgcg | gctaccggt | ctcggcgggc | gagaagcagc | gcctcgccct | 77280 |
| ggcccgcctg | ctgctcaaat | cgcctccggt | ggtggtgtc | gacgaggcca | ccgccatct | 77340 |
| ggactccgaa | tcggaggcgg | cgatccagcg | ggccctggac | acggcgctcg | ccgggcgtac | 77400 |
| gtcgtcgtc | atcgcccacc | ggctcgccac | gatcctggac | gccgaccaga | tcctcgatcat | 77460 |
| cgacgacggc | cgcgtcgtcg | agcgcgccac | ccacgacgag | ctgatcgcg | acggtggcct | 77520 |
| gtacgccgag | ctgtaccgga | cccagttcgc | cggccagcgc | accgaggagc | gccagccggc | 77580 |
| cgtgcctgc | tgagatgtcc | ctggaggacg | acgttcgggc | ggccgggtat | tcccggccgc | 77640 |
| cgcagtcgta | tggaccgcct | ctacggcgcg | accggggccg | ccagggtccgc | gccggcgctc | 77700 |
| gcggggcagg | ccacgcccgc | cagggccatg | tcgtcgggtca | gtccccccgc | gaggatgtcg | 77760 |
| agcacgtgcc | gcacgccggc | cgtgccgcgc | accgcgaggc | cgtacagcac | cgggcggcct | 77820 |
| accaggaccg | cgtcggcgcc | gagggccagc | gacagcagga | cgtcgcggcc | gcgcgcgacg | 77880 |

APPENDIX A

| | | | | | | |
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| tcgagcgtcg | ccggcacgcc | gtcgagctgc | cggccgccgt | ggttgagagac | gacgatccc | 78000 |
| tccgcacccg | cgtcgagcgc | ccgccgggca | ccgtcggcgg | tcagcacgcc | cttgagcagc | 78060 |
| accggcagcc | cgtcgagctc | ccgcagccag | gcaacgacgg | tccagtccat | cgcggcgctc | 78120 |
| aacgcgccga | gcgcgtgccc | gctggggcgac | gcgaagccgt | cgcgggtgag | gtttgcgggc | 78180 |
| gccacgccgg | gcggcaggcg | gaagtcgttg | cggatgtccc | gcaggcggcg | gcccagccgc | 78240 |
| ggcgcgtcga | cgggtgagcac | cagcgccctc | aagccggcgc | ggacggccct | cgtgacgagc | 78300 |
| gcggcggtga | ccgcccggtc | gcggaagcaa | tagacctgca | accagcgcgg | cgcgggtggtg | 78360 |
| gccgcggcga | tgtcctccac | ggtccgccc | gagaacgtgc | tcaccacgag | cggcagccc | 78420 |
| gccgcgcgg | ccgcgcggc | ggtggcgacc | tcgcccgccg | ggtcgacgag | cgtgtgatag | 78480 |
| ccgagcgggg | cgcgcgcgat | cggcgccgcc | caccgcgcgc | caggagtcgt | cgtgcccgtg | 78540 |
| tccggcgcg | ccgcgcgggt | cagcaccctg | ggccgcagcc | gcggcggtgc | gaaggcggcg | 78600 |
| gtgttcgcgg | ccagcgtcag | ctcctcccc | gcgcgcggcg | cgatgaagtc | ccacaccggg | 78660 |
| ggctccattc | gcgcttgggc | cagctgttcg | tagtcgcgca | gggtcagggg | caggagggcg | 78720 |
| gtggcggtca | cggcggcgtc | ctttcgctgg | cggcctggag | gcgcgcggca | ggcgggccgag | 78780 |
| cgcgcggcg | gaccactatg | gacgtcggcc | gaaccgtcca | ccaacgcagc | tcaccgacgg | 78840 |
| tgtccaaccg | tgcgttcgcg | gcagttgcac | aggtgtgcgg | tcaccgccgt | ggcttcgatt | 78900 |
| gatcggtgcg | gaatgcgggtg | ccacagtcag | ggcttcgcga | cgcgcgagga | gaccatgatg | 78960 |
| agcatcctgc | gcgaggctcc | gggcaccggc | cgcgtcctgc | ggcgcgagga | cctgcaccag | 79020 |
| agcctgtccg | acccgctgct | ggacaccatg | aacttctcca | acgaggtgac | cgcgcgctat | 79080 |
| ccgcgagccg | tctcgttcgc | gcccggccgc | ccgttcgacg | ggttcttcga | cgtcgagcag | 79140 |
| atcttcgcgg | gcacccgcgg | ctatctcgag | cacctcgccg | gccagggccg | ctcgcccgcg | 79200 |
| gagatcaggg | acgcctgctt | ccagtacggc | ccggcgcccg | gccgcacccg | cgcgggtgatc | 79260 |
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| cacaccaacc | cgtcgggcgc | cacgatgccg | ctggaggccc | gccacgccct | gctcgacctc | 79620 |
| gccggcgagc | tgcgcctgct | ggtgatcgag | gacagcccgt | accggctcgt | cgcgcggggg | 79680 |
| cgcgcgcttc | cctccctcaa | ggccctcgac | ccgggcgggc | acgtcgctca | cctcggatcg | 79740 |
| ttctccaaga | cgtctcttcc | gggcgcgcgc | gtgggcttcg | cgcgcgcgca | ccgcgcgggtg | 79800 |

APPENDIX A

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|------------|-------|
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| gtcacgggtga | acacctcgcc | gctgagccag | gccgccgtgg | ccgggatgct | gctcgcgggc | 79920 |
| ggcggcaccg | cgggcgaggc | gagtgcggag | agctcgggcg | actacggcg | ggcgatgcgg | 79980 |
| cgcacctcg | accggctcga | ggagcacctt | ccggcgctct | tccgcgcacg | cacgggcgtg | 80040 |
| cgctggaacc | gcccagagcg | cggtctcttc | ctcgccgtga | acgtgccctt | caccgccgac | 80100 |
| aacgccgccc | tgtcccgaag | cgccgaggac | cacgggggtga | tctggacgcc | gatgtcgtac | 80160 |
| ttctaccggg | cgggcgggcg | cgaacagggc | atccgcctgt | cgatcagcta | cctcaccggc | 80220 |
| gaggagatcg | acgaggggtg | caagcggctg | gcgggcttca | tcacgaccga | gatcgcgcca | 80280 |
| ctccggccgt | gaccaccccg | aatcgcacag | tctgcaactt | gcagaaatag | ggccgaaccc | 80340 |
| gtccccggcg | ccctcgggcg | gggcggcccg | gaccggcccg | gcacgtccac | cgtggcaccc | 80400 |
| ccgagatctc | ccggttgacc | agtacgaacg | gcacggacac | gatgacgcat | cgtggcgatc | 80460 |
| agatcccgt | cgacggccac | cgacccaccg | tgggatcgat | aaacttcacc | gtgaagacag | 80520 |
| cttaaaaatg | cgtcagagaa | cctcttacga | gcttggcgag | ccagcgccgc | ctcgattagt | 80580 |
| gtcggacatt | gaaagcccg | tgcacaagcg | cactcggcca | cgacggccga | gccggccgac | 80640 |
| ggtcgtcaaa | gcctctcggt | gagacctg | gtgcacgtg | tccagcggtc | atcggagtcc | 80700 |
| agccattcgg | gggttggtat | ggagtcattg | cacatcgctg | cagcgcgcca | cgagccggat | 80760 |
| cggcacgacg | aaacacagat | gaacactccg | tcaatgatgc | gcgtcgagtg | gctacctgtg | 80820 |
| gattcactgg | aatgctcga | ttcaccggcg | ctggccggcg | aggatccggcg | gcacaccgag | 80880 |
| atgctggcca | gcctcgacgc | cgaactgccg | ccgatcatcg | tgcaccgcgc | aagcatgcgg | 80940 |
| gtcatcgacg | gcgcgcaccg | gctggggcg | gcccggctgc | gcggcgacga | gctgatcaag | 81000 |
| gccgcgatgt | tcgagggcag | cgagcaggag | gcattcgctc | tccgggtcaa | ggcgaacatc | 81060 |
| gcgcacggcc | tgccactgtc | cacagcggac | cgacgcgcgc | ccgcggaacg | gatcatcgag | 81120 |
| tcgcatccgt | cctggctcaga | ccgcacaata | gcggcctcca | gcggactcag | cgcccgacc | 81180 |
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| cgcgtcggcc | gggacggccg | ggtgcgccc | ctggacaatt | ccgagggcg | actgaaggcc | 81300 |
| gtcagctaca | ttcagcaaca | gcccagcgcc | tccctcgggg | agatcgccaa | gaacgcggc | 81360 |
| gtatcgccct | cgaccgcgcg | tgacgtgcgc | aatcgccctg | agcgcggcga | ggaccgcgtg | 81420 |
| cccggccccc | gccgcacggg | cggtcacgcg | gaacacattt | ccttcgacaa | ggaaaacacg | 81480 |
| attcggctgc | tcgagccgac | cgtgcgggtca | atacttcaag | gcttgaagaa | cgaccgcgtg | 81540 |
| ctgcgattta | ccgaatccgg | ccgcaatctt | ttgcgatggg | ttcttgcccg | cacggttcaa | 81600 |
| gatgatgagt | ggaaagacat | gctcgacgcg | gttcogtcgc | attgcacgta | cgtcctggcg | 81660 |
| aacgtggccc | ggcgttggtc | acaagagtgg | ttggaattcg | ccgaaacact | cgagaagaac | 81720 |

APPENDIX A

gcggcctgaa cagcgaatgc ggcgatggga gccctt

gtg cgc agc gcg gtc gtc 81774
Val Arg Ser Ala Val Val
1 5

gtc ggc acc ggg ctg atc ggg acc tcg gtc ggc ctc gct ctc acc caa 81822
Val Gly Thr Gly Leu Ile Gly Thr Ser Val Gly Leu Ala Leu Thr Gln
10 15 20

cgt gac atc acc gtt cac ctg ctg gac gcc gat ccc gcc gcc gcg cgc 81870
Arg Asp Ile Thr Val His Leu Leu Asp Ala Asp Pro Ala Ala Ala Arg
25 30 35

gcc gcg gcg gcg ctc ggc gcg ggc atc gcg ggc gag ccg cgc acc cgg 81918
Ala Ala Ala Ala Leu Gly Ala Gly Ile Ala Gly Glu Pro Arg Thr Arg
40 45 50

gtg gac gtc gcc gtg atc gcg gtg ccg ccg gcg gcc gtc gct ccc gtg 81966
Val Asp Val Ala Val Ile Ala Val Pro Pro Ala Ala Val Ala Pro Val
55 60 65 70

ctg gcc gac ctc cag cgg cgg gga acg gcc cgg gtg cac acc gat gcg 82014
Leu Ala Asp Leu Gln Arg Arg Gly Thr Ala Arg Val His Thr Asp Ala
75 80 85

gcg agc gtg aaa gtg ctg ccc tcc cgg cag atc gag gtg ctc ggc tgc 82062
Ala Ser Val Lys Val Leu Pro Ser Arg Gln Ile Glu Val Leu Gly Cys
90 95 100

gac gcc tcc tcc cac gtc ggc ggg cat ccc ctc gcc ggc agc gaa cgc 82110
Asp Ala Ser Ser His Val Gly Gly His Pro Leu Ala Gly Ser Glu Arg
105 110 115

tcc gga ccg cac gcg gcc cgg ggc tcg ctg ttc gag ggg cgg ccc tgg 82158
Ser Gly Pro His Ala Ala Arg Gly Ser Leu Phe Glu Gly Arg Pro Trp
120 125 130

gtg ctc tcc ccc ggc cgg cga agc agc acc gcc gcc gtc gac ggg gcc 82206
Val Leu Ser Pro Gly Arg Arg Ser Ser Thr Ala Ala Val Asp Gly Ala
135 140 145 150

ctg gcc gtg gtt tcg gcc tgc ggc gcc acg ccg gtg ctg atg agc gcc 82254
Leu Ala Val Val Ser Ala Cys Gly Ala Thr Pro Val Leu Met Ser Ala
155 160 165

gag gag cac gac cgg gcg gtg gcc ctc gtc tcg cac gtg ccg cac ctg 82302
Glu Glu His Asp Arg Ala Val Ala Leu Val Ser His Val Pro His Leu
170 175 180

gtg gcc ggc ctg ctg gcc gcg cgg atg ctg gac ggc acc ccg gcc cag 82350
Val Ala Gly Leu Leu Ala Ala Arg Met Leu Asp Gly Thr Pro Ala Gln
185 190 195

ctg ggc ctg gcc ggc cag ggc gtg cgg gac acc acg cgg atc gcg ggc 82398
Leu Gly Leu Ala Gly Gln Gly Val Arg Asp Thr Thr Arg Ile Ala Gly
200 205 210

ggc cgc gcg gca ctg tgg acg gag atc ctg gcc gcc aac gcc ggc gcg 82446
Gly Arg Ala Ala Leu Trp Thr Glu Ile Leu Ala Ala Asn Ala Gly Ala
215 220 225 230

gtc gcc gac gtg ctc gac gac ctg tcc gcc gag ctg gcg gcg acc atc 82494
Val Ala Asp Val Leu Asp Asp Leu Ser Ala Glu Leu Ala Ala Thr Ile

APPENDIX A

| 235 | 240 | 245 | |
|---|-------|-----|-------|
| tgc gcg ctg cgc gag ctg gag gcc cat ccg ggc cgc gcg gag gcg etc Ser Ala Leu Arg Glu Leu Glu Ala His Pro Gly Arg Ala Glu Ala Leu 250 255 260 | | | 82542 |
| gcc gcg ctc acc ggc atg ctc cag cgc ggc gtc gac ggg cgc gac cgc Ala Ala Leu Thr Gly Met Leu Gln Arg Gly Val Asp Gly Arg Asp Arg 265 270 275 | | | 82590 |
| atc gcc gcc agc ccc Ile Ala Ala Ser Pro 280 | | | |
| tga ccgcgcgtcg gcggggcgga | 82628 | | |
| ccggatcgcc gccggctccg gaacggcgcg ccgcagcgca cgcaccgccg gcccgggccgt | 82688 | | |
| caccgcgagc agcgcgagac agatcggcgg ccaccagaaa ctcgtagtgc cgcagcggtc | 82748 | | |
| gcccgggcag aggtttggcca ccatcgacac gccgaggccc agcgcaagcc cgaattcggc | 82808 | | |
| cagggcgagc accggggcggc ggacctcccc ggggccgata cgcaccgcga ggaggaacag | 82868 | | |
| gagcgcgccg agaacggcga tctccgggta cccgcgcgcg gccgtcaact cggcgctcag | 82928 | | |
| cacgcggtcg gcgccgagac cgagcaccag caccgtcgcc accgcgacgc cggcgaccca | 82988 | | |
| cagtctccgg gtgagctggt acatgacgac caggaacagc gcgaacagga cgagcagcgg | 83048 | | |
| cgcacggacc ggcaccaccc cggcgccgaa cgcccgacc agcggtgcgg ccaggtgggc | 83108 | | |
| ctcgagcatg cccatgtagt cctggccgta cagatggacc ggtgcgtcgc gtcctcgcgc | 83168 | | |
| gatgtgcagg gagaccagcc cgagaactgc ttcgtcgctg tcggtcggcg ggcttcccag | 83228 | | |
| cgccaccagc accgtgcggt accgcaccgc cgccccgcg atgaccaggg cgccaccgc | 83288 | | |
| ggcacgacgc tcgccgccgc ccccggttc cggggtgcca cggacgagtg cgcccggtc | 83348 | | |
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| ctgatagecg | togtgggccc | gcccgatgtc | caggctcgtg | acgatcaagt | aggccaccaa | 86288 |
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| agcatcgcg tgcagatccc cgtacacatg gtgcgcogtg acggcaagaa gggggtgcgc | 88208 |
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| ctcggcaacc cctcttcaa cgaggtgatc gtgccgatgg ccgagaagga caggtggaac | 88388 |
| agcctgccgc cgagcgagga caagcagttc gcc | 88421 |